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THE UNIVERSITY OF ALBERTA

STUDENT CHARACTERISTICS AND ACADEMIC SUCCESS IN SELECTED PROGRAMS AT THE NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY

by

© PETER GORDON STEWART

A THESIS

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Student Characteristics and Academic Success in Selected Programs at the Northern Alberta Institute of Technology" submitted by Peter Gordon Stewart in partial fulfilment of the requirements for the degree of Master of Education.

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Date October 15, 1974

ABSTRACT

The purposes of this study were to describe characteristics of first-year business and vocational students of the Northern Alberta Institute of Technology, and to determine the significance of these characteristics on student academic success. Data with respect to the following student characteristics were gathered: demographic and high school and work background factors, aspirations and objectives, socioeconomic status and value orientation.

Usable data were obtained from a random sample of 178 students. Third quarter grade-point averages were obtained from Institute files.

Examination of the demographic data revealed that few business students but all vocational students were female, and that the large majority of the students were under twenty years of age and single.

It was found that the majority of the students had attended large high schools, had liked their student life, had made use of counselling services and had been relatively inactive in extra-curricular activities. A majority of the students came directly to the Institute after having completed academic programs and after having obtained a diploma and/or university entrance qualification.

A majority of the students made their decision to attend NAIT after leaving high school with the agreement of their parents. The most influential factors contributing to their decisions in order of importance were the job placement record of the Institute, low tuition fees and "friendly atmosphere". Students generally placed importance on completing their programs and attaining good grades in the expectation of a relatively high level of earnings following graduation.

The findings revealed that almost half of the students came from rural communities or small centers, and that a large majority came from relatively large, middle and lower middle class families. Almost half of the students' fathers had not completed high school. Student expenses and anticipated future indebtedness varied widely depending on whether students were married or lived with and were supported by their parents. The chief sources of student funds were found to be summer jobs, parents and government loans and grants.

Analyses of the data were made to determine the relationship of the student characteristics to academic success. A chi square analysis of categorical variables revealed significant relationships between the sex and marital status variables and the level of student academic success. Pearson product-moment correlations and one-way analysis of variance failed to reveal a significant relationships between student value orientations and student academic success. Correlations between student characteristics and their grade-point averages were found to be low. Stepwise multiple regression analyses suggested that nonintellective student characteristics were not strong predictors of academic success. The best predictors were found to be variables associated with student aspirations and high school background.

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Chapter 1

THE DEVELOPMENT OF THE STUDY

INTRODUCTION

McConnell and Heist (1962) in their survey of the literature reported that concern for an understanding of student characteristics and their importance in the teaching/learning process has fluctuated since the first of such studies appeared about the beginning of World War II. Heist observed that prior to the last decade these fluctuations appeared to have been fairly consistent with the development of testing and psychological measurement (1969:1318). However, several recent cultural, scientific and technological developments have led to a renewed interest in the study of student characteristics.

Student protests during the 1960's resulted in the publication of many studies focused on the problems of student alienation, institutional governance and the characteristics of members of the "counter culture" (Roszak, 1968; Somers, 1965; Watts and Whittaker, 1966). Small group research and the publications of Carl Rogers (1969), Mazlow (1962), Goodman (1966) and Bennis, Benne and Chin (1961) have emphasized the importance of supportive human relations based on intimate knowledge of and sensitivity to individuals not only in the teaching/learning process but also in the effective supervision of personnel.

A further impetus to the study of student characteristics has been the public demand for educators and their institutions to be accountable for use of public funds. This pressure has stimulated renewed interest in the development and use of efficient and effective administrative and instructional methodologies. A major emphasis of many of the currently espoused administrative techniques is on the importance of the procurement of adequate quantitative and qualitative data (i.e. information) to ensure the efficient coordination of the interrelated parts of any system so that the system's objectives may be attained. The "total systems concept" (Andrew, 1970) stresses this importance of information as the basis of productive decision making. The acceptance of this need for relevant data has recently led to the collection and storage of an extensive range of student information in the computerized data banks of many educational institutions.

STATEMENT OF THE PROBLEM

The purposes of this study were to describe the characteristics of students enrolled in the first year of two-year Business and Vocational Department programs offered by the Northern Alberta Institute of Technology (NAIT) in Edmonton, Alberta; and to determine the significance of these independent student characteristic variables (see Table 1) on student success as measured by weighted grade averages at the end of the third quarter of their first year.

Descriptive data with respect to the variables listed in Table 1 were gathered. In addition to this information the instrument employed also solicited each student's name, program, age, sex, and marital status.

Table 1

Student Characteristics Variables

Student Demographic Variables

Sex
Age
Marital status

Student High School and Work Background Variables

High school size
Degree of student role satisfaction
Extent of extra-curricular activity
Perception of peer friendliness
Frequency in using counselling services
High school program
High school academic qualifications
Duration of work prior to attending NAIT

Student Aspirations and Objectives Variables

Time decision was made to attend NAIT
Degree of parental influence on attendance
Importance given to good grades
Importance given to program completion
Post-graduation plans
Post-graduation earning expectations

Variables of Importance to Students When Considering Attendance at NAIT

Importance given to teaching reputation
Importance given to atmosphere
Importance given to cost
Importance given to athletic program
Importance given to employment
Importance given to proximity to home
Importance given to friend attending
Importance given to NAIT job placement record
Importance given to advice of parents or spouse
Importance given to uniqueness of program
Importance given to specified factors

Student Socioeconomic Variables

Size of home community
Father's socioeconomic status
Mother's occupation
Father's educational level
Mother's educational level

Table 1 (continued)

Number of brothers and/or sisters
Expected expenditure on tuition, fees and supplies
Expected expenditure on room and board
Expected expenditure on clothing and incidentals
Expected expenditure on travel and car
Expected expenditure on specified items
Source of funds: job previous summer
Source of funds: part-time job
Source of funds: full-time job
Source of funds: personal savings
Source of funds: government loans or grants
Source of funds: scholarships or bursaries
Source of funds: parents
Source of funds: wife or husband
Source of funds: other specified source
Amount of financial assistance requiring repayment
Parents' combined annual income

Student Differential Value Inventory Variables

Traditional value orientation
Emergent value orientation

A further area of student characteristics described in this study was the disposition of students toward either traditional or emergent values.

LOCUS OF THE STUDY

The Northern Alberta Institute of Technology became operational in 1963. Subsequently a seven-story tower opened in 1965 and a technical wing in 1968. The Institute has a floor space of 22 acres in eight buildings, most of which are interconnected. These buildings contain 170 shops and laboratories and 110 classrooms providing accommodation for approximately 5,000 students at any one time (1973-1974 Institute Calendar).

Construction of the Institute was made possible by federal government financing of buildings (75%) and programs (50-100%) under the Vocational Training Assistance Act of 1960 (Goard, 1965). This Act was a response to the shortage of technicians due to the rapid growth of the Canadian economy as well as to diminished immigration of highly skilled manpower from Europe. Situated in Edmonton, the governmental and industrial center of northern Alberta, the establishment of the Institute received the support of government, business and industry, as well as the community at large.

Initial enrollment exceeded expectations. Its three divisions provided post-secondary business, industrial and technology programs for approximately 18,000 full- and part-time students during the 1973-1974 academic year. This total included approximately 4,000 full-time day students, 6,000 apprentices and 8,000 evening students (1973-1974 Institute Calendar:7).

SIGNIFICANCE OF THE STUDY

The significance of this study lies in the value of the information collected for administrative, instructional and support staff decision making within the Institute. The continuing interest in student characteristics research (Cramer and Stevic, 1970-1973) in spite of inconsistent and often contradictory results, clearly indicates the general acceptance of the potential value of findings for large, complex educational institutions.

The Institute's large physical plant together with prevailing class hours and teaching loads make close contact between instructors and students difficult. The resulting social distance between many members of the faculty and their students may be expected to result in a general feeling of depersonalization with dysfunctional consequences for individuals in all Institute constituencies. The availability of detailed information about student characteristics should ameliorate the negative effects of these factors common to large educational institutions.

While many research projects have focused on students' characteristics, few of these have dealt specifically with community college students. Cohen and Brawer (1971:48) suggested that the tendency of these colleges to overlook the vital implications of the personal differences and individual needs of students may be behind many of their current problems (e.g., high dropout rates and apathetic students). Decision makers also need to know the extent to which they can expect their heterogeneous student bodies to have similar characteristics (Cohen and Brawer, 1970). In this regard studies by Tillery (1964), Warren (1966) and Medsker and Trent (1968) suggested that junior college students were homogeneous in such potentially significant directions as conformity, conservatism and concern over grades. With the availability of student characteristics information, curriculum planners should be in a better position to provide for the specific needs of individuals and groups.

Cohen and Brawer (1970:53) claimed that there were two essential questions community colleges must ask themselves about each of their students regardless of whether programs are completed: "What did the student look like on entrance?" and "What did he/she look like on exit?" They proposed that it was upon the quality of the difference that post-secondary educational institutions can be held accountable. An extensive knowledge of student characteristics is a prerequisite for this evaluation.

Bloom's (1968) concept of learning for mastery suggested that a student's previous academic performance and ability to perform via traditional tests should not be regarded as key data, but as two important student characteristics to be given the same consideration as other intellective and non-intellective data essential to the design of meaningful educational experiences leading to subject mastery for all but a small percentage of students. Applying Bloom's concept, a student might be regarded as entering a post-secondary system at one point on a continuum. To take advantage of the system's potential he needs information, advice and counselling. To structure this information and ensure counselling effectiveness an extensive knowledge of student characteristics would be essential.

This structuring of routes to learning might be expected to also dictate a change in what constitutes post-secondary-level material. Content might then be selected as advised by Roueche and Herrscher (1970:25) on the basis of its relevance to the needs and characteristics of students and the purposes of the two-year program.

A feature of two-year post-secondary institutions often held to distinguish them from four-year universities was that they placed an emphasis on teaching rather than research. However, there was massive evidence (Roueche and Herrscher, 1970:26) that instructional methodologies in most colleges were similar to those practiced in universities even though their goals, students and faculties were radically different. The data on student characteristics provided by this study may develop an awareness of these differences and stimulate activity to develop appropriate instructional methodologies.

Because of the nature of their student bodies the counselling function was emphasized in most post-secondary, non-university colleges. This function was frequently limited by the paucity of information about individual students in the hands of counsellors. The lack of information about students was particularly true of departmental advisors, instructors and administrators within the Institute. Puffer (1971:3-4) noted that

> There is at NAIT a lack of systematic data . . . . A lack of reliable data on student characteristics may contribute to an inappropriate curriculum design and irrelevant education process . . . . Inappropriate administrative decisions regarding future planning, curriculum change, guidance and educational leadership may also result.

DEFINITION OF TERMS

Institute or NAIT

Institute or NAIT when used in this study refers to The Northern Alberta Institute of Technology.

Intellective Variables

Intellective variables refer to those traits, qualifications or conditions which have as their basis intellectual capacity and/or performance. Examples are test scores and academic qualifications.

Nonintellective Variables

Nonintellective variables refer to traits and/or conditions which do not have as their basis intellectual capacity and/or performance. Examples are values and physical and demographic characteristics.

Socioeconomic Status

A socioeconomic status level when assigned to an individual indicates the ranked position that has been assigned to a person as a consequence of the popular esteem in which his occupation, income level and education are held. For purposes of this study The Two Factor Index of Social Position developed by A. B. Hollingshead (1965) will be used to designate the socioeconomic status of the fathers of student respondents.

Grade-Point Average

Student percentage course marks for each course are multiplied by class hours. The total of these marks is then divided by total class hours for the twelve-week quarter to produce a grade-point average (1973-1974 Institute Calendar:22).

Values

A definition of value advanced by Kluckholm (1959:395) is

> . . . a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable, which influences the selection from available modes, means and ends of action.

This concept suggested that values may serve as conscious or subconscious drives, that they are somewhat inflexible in that they are idiosyncratic to an individual or a group.

Spindler (1955:145-146) stated that

> The anthropologist . . . sees culture as a goal-oriented system. These goals are expressed, patterned, lived out by people in their behaviors and aspirations in the form of values . . . characterological features, and states of mind that . . . act as motivating determinants of behavior.

This statement appeared to place emphasis on the group as the source of values, on the close relationship of values to goals, and on the role of values as motivating determinants of behavior.

The dichotomous classification of value orientations as either traditional or emergent employed in this study was originally made by Spindler (1955). Getzels (1957:92-102) subsequently placed values into two categories:

> Traditional Categories: individualism, work-success ethic, future-time orientation, and puritan morality, achievement orientation.
>
> Emergent Categories: relativistic moral attitudes, consideration for others, sociability and present-time orientation.

The value items in the instrument used in this study were derived from the Differential Values Inventory (DVI) developed by Prince (1957) following the classification of Spindler and Getzels and revised by Friesen (1971).

As adapted by Friesen and as measured by the revised DVI, a traditional value orientation is characteristic of an individual who emphasizes the work-success ethic, a future-time orientation, personal independence, and rigid discipline. An emergent value orientation, on the other hand, is characteristic of an individual who emphasizes sociability, a hedonistic tone, group conformity, and/or other-directed orientation.

ASSUMPTIONS

The underlying assumptions for this study were that the instrument employed to collect data with respect to the selected variables was both reliable and valid and that therefore the information gathered by it accurately reflected the views and opinions held by the respondents.

The concomitant assumption was also made that the students who participated in the study possessed the necessary knowledge to complete the instrument.

LIMITATIONS

This study was limited to those variables selected for inclusion in the instrument.

The findings may be limited in their applicability to the Business and Vocational Department programs studied at NAIT. The methodologies of analysis applied to the data may further limit generalizations on the findings.

Questions worded to ascertain value orientations can be expected to elicit highly subjective answers. The forced-choice type of inventory used may have resulted in respondents making choices from different points of view from time to time depending on the connotation placed on the item wording. While the DVI was designed to check and reaffirm selections, the length of the inventory may have resulted in fatigue and carelessness of response in some cases.

DELIMITATIONS

The student sample was selected from only first-year students enrolled in seven two-year programs offered by the Business and Vocational Departments of the Northern Alberta Institute of Technology.

This study was delimited to selected characteristics of students enrolled in the seven programs.

CHAPTER SUMMARY AND ORGANIZATION OF THE THESIS

This chapter has introduced the research problems, the significance of the study, and described the locus of the study. It has also defined unusual or important terms and stated the assumptions, limitations and delimitations of the study.

In Chapter 2 the literature related to the study is reviewed. Chapter 3 provides a description of the research methodology employed. A detailed description of the sample is given in Chapter 4 followed by analyses of the data in Chapter 5. Chapter 6 contains a summary of the study, a listing of conclusions and implications based on the description of the sample and the analysis of data, and some recommendations for further research.

Chapter 2

REVIEW OF RELATED LITERATURE

Studies of community college students in the United States and Canada have emphasized the importance of student characteristics as a basis for effective educational decision making (Medsker, 1960; Abe and Holland, 1965; Tillery, 1969). Cross (1968:10) stressed the need for continuous study of this area because of the rapidly changing nature and role of students. This need for data was held by Puffer (1971) to be particularly relevant to educational institutions which have "modified" open-door policies and which stress the importance of counselling.

A research design used frequently in recent years employs regression analysis in which one or more predictors taken before admission attempts to approximate one or more criteria measures of success taken after a period of time in the institution. Availability of relevant data on student characteristics is a prerequisite. Studies reviewed commonly divided predictors into intellective and non-intellective categories. Theoretically, nine predictor-criterion combinations were possible.

Predictor	Criterion
Intellective only	Intellective only
Intellective only	Non-intellective only
Intellective only	Both
Non-intellective only	Intellective only
Non-intellective only	Non-intellective only
Non-intellective only	Both
Both	Intellective only
Both	Non-intellective only
Both	Both

An increasing majority of colleges used academic aptitude tests to predict student success (Heist, 1969:1318).

However, since 1960 a trend toward a more comprehensive approach to prediction employing non-intellective measures has become evident. While most studies continued to affirm that past academic achievement was the best predictor of future academic achievement (Richards and Lutz, 1968; Sheldon, 1970), Lunneborg (1970) found that biographical data were helpful in predicting student success or failure in specific areas of study. Most often the non-intellective tests used were personality or interest inventories. Holland and Nichols (1964) found that self-report data regarding interests and activities and aptitude measures enabled them to predict non-intellective attainments as well as intellective achievement.

McConnell (1961) and McConnell and Heist (1962), concerned with the relationship between student development and choice of college, examined the "fit" of a college and student characteristics.

While students attending two-year post-secondary non-university institutions were found to have a wide range of ability and talent (Tillery, 1969), many studies supported the conclusion that a substantial percentage of these students were disadvantaged in terms of their previous education and backgrounds.

With Cross (1968) and Knoell (1970), Brawer (1971:3) argued against the use of traditional instruments to understand a disadvantaged student:

> The disadvantaged student tends to be handicapped in a variety of ways when confronted with group tests of aptitude and achievement in common use . . . . A prior handicap is his basic lack of motivation to do well on tests, in part because of his self-concept as a loser in school competition.

Cramer and Stevic (1971) also contended that the use of predictors that may be culturally biased or evoke anxiety in the test situation were inappropriate when applied to handicapped or culturally different populations.

With the exception of two items on the questionnaire (see Questionnaire Appendix A: Part A, Items 6 and 7), this study sought to obtain nonintellective data and to determine the predictive value of this data with respect to student academic success. This chapter will review recent literature related to the variables used.

HIGH SCHOOL BACKGROUND AND WORK EXPERIENCE

Bledsoe's (1953) study of Georgia high school students confirmed earlier findings by Douglas (1931) and Feder (1940) that there was a small positive relationship between high school size and academic achievement at the post-secondary level. The contrary finding (that there was no significant relationship) was reported by Schroeder and Sledge (1966) in their review of research in this area.

Panos and Astin (1967), reporting on the National Merit Scholarship Corporation study of 35,000 students, found that students whose relationships with their peers were friendly and cooperative, and who participated frequently in extra-curricular activities, were less likely to withdraw from college. Vaughan (1968) also identified lack of participation in extra-curricular activities as a factor in identifying non-persisting students. Schoemer (1968) concluded that unsuccessful college students tended to be passive and apathetic.

An objective of high school counselling is the guidance of students into post-secondary programs for which they are academically suited. In her extensive survey of college student perceptions of the assistance received from their high school counsellors, Casserly (1968) found that students felt that advisers did little to raise their aspirations or increase their motivation. Students also felt that counsellors did not have accurate perceptions of their abilities and that they were too conservative in their advice.

Behm (1967) and Hakanson (1967) found that occupational students attending community colleges were likely to have taken an occupational program in high school.

With respect to tested ability, community college students were found by Flanagan and his associates (1964) to be very like high school seniors except that the former tended to be in the middle range of ability with fewer very high- or very low-ability students. This finding suggested that Barzun's (1968) contention that the best students should go to university and the rest to other colleges is a fait accompli. Farquhar's (1967:42-43) analysis of Alberta high school graduates indicated that in 1966, 67 per cent qualified for a diploma and of these, approximately 37 per cent matriculated (i.e. obtained university entrance qualifications).

These findings indicated that a large segment of Alberta high school graduates are potential enrolees in Alberta institutes of technology and community colleges since these institutions only require a diploma for entrance into most of their programs.

STUDENT ASPIRATIONS AND OBJECTIVES

Many factors are influential in a student's decision to attend a post-secondary school. Sewell and Shaw (1967:22) suggested that the decision to enter college was the most critical factor in the process of obtaining higher education because it was at this point that over one-quarter of the high-ability male high school graduates and almost one-half of the high-ability females decided against immediately continuing their education. Farquhar (1967) reported that approximately 63 per cent of 1965-66 grade twelve students did not continue their formal education in the following year. Cross (1970:2) claimed that those choosing post-secondary occupational programs made their decision between the ages of 14 and 18, if not far earlier. Dennison and Jones (1970) examined the decision-making patterns of Vancouver City College students to determine how realistic these patterns were in the light of subsequent academic achievement. They concluded that successful students were more confident than unsuccessful students with respect to their decision to attend the College. The successful students were also more confident in their ability to succeed.

Many researchers (Cohen and Brawer, 1970:50) observed that community college students consistently have lower abilities than students enrolled in four-year colleges. Erikson (1963:27) asked whether a year's delay to recharge, achieve vocationally, and reassess motives and interests might not assist a student to be successful after enrolling. Birenbaum (1971) compared the plight of new community college students to that of university freshmen pointing out that the former were more likely to be disadvantaged in terms of their educational and social background and yet were expected to make career choices with fewer options far earlier. Cohen and Brawer (1970:50) recommended that because community college students not only tend to have lower ability but also ambiguous and unrealistic goals (a conclusion supported by Anderson and Olson, 1965), these students should be given more time to make choices by delaying the choice of a major to a second or third term.

Narine (1971) found that the highest degree of perceived parental influence was associated with students who chose to attend university and the lowest degree with those having no plans respecting post-secondary education. Trent and Medsker (1968), in their comprehensive study of high school graduates, found that the home or early environment was not only influential in the decision to continue education past the secondary level, but it was also an essential factor in determining success in college. In this latter respect, Cohen and Brawer (1970:16) reported that nearly seventy per cent of persisting students felt that their parents definitely wanted them to attend college when they were attending high school. Only fifty per cent of withdrawing students and ten per cent of non-attenders felt that their parents wanted them to attend college. That this influence is not wholly benign was suggested by Fitch (1969) who concluded that family and social pressures were responsible to a high degree for the reluctance shown by students to change their goals when they had proven to be unrealistic in terms of their abilities.

Occupationally oriented students were found by Hoyt and Munday (1969) to demonstrate more diverse traits and more varied grades than four-year college students. However, Cross (1970:2) believed that occupationally oriented students had a keen interest in concrete tangible goals (i.e. grades) that was consistent with the research that found lower socioeconomic groups concerned with security and concrete rewards. This concern may have been reflected in Stein's finding (1968) that low-ability junior college entrants were willing to drop extraneous activities that might interfere with their success in order to devote themselves to regular study.

Based on their extensive studies of students, Sewell and Shah (1967:4) hypothesized that such persistence and desire to complete their education pursuits might be as influential as ability or socioeconomic status in determining whether a student would graduate or not. While the desire to complete their programs was commonly found to be characteristic of persisting students, following a review of studies of student flow Knoell (1971:12) concluded that most community college students needed more time to complete their programs than the two years presently allotted.

College Guidance Placement statistics reported by Hakanson (1967) indicated that twenty-one per cent of community college students in vocational programs hoped to continue their education at the university. A follow-up study by Davison (1968) of career graduates of four New York community colleges found that three years after graduation forty-four per cent of the respondents were enrolled in or had completed a four-year university program.

Whether college graduates planned to continue their education or not, many studies indicated that students have high income expectations. Stein (1968) found that low-ability junior college entrant's believed that attendance was a means to a more economically productive life. However, Berg and Axtell (1968) in their studies of disadvantaged California community college students noted a low degree of correspondence between expectation and reality with respect to post-graduation income expectations.

VALUE ORIENTATION

Much curriculum planning appears to be based on the premise that the attitudes and values held by students are modifiable. This confidence is illustrated by currently well accepted definitions which hold that the primary objective of education is learning: a process which in turn has as a goal, change or reinforcement of the learner's ideals, beliefs, values and interests (Klausmeier, 1961). However, the major longitudinal studies of the development of college students' personality characteristics cited in this section reported conflicting evidence regarding the effect of college attendance on student attitudes and values.

Jacob (1957) reviewed studies of student value change as a consequence of college attendance and concluded that the major value outcomes were the acquisition of a college outlook, and a tendency toward flexibility and sociability. The finding of the studies reviewed also suggested that students did not become more liberal, and that no significant change in basic values occurred.

Other studies indicated that any changes that occurred were dependent in degree upon the nature of the experience (Smith, 1955), the type and nature of the contact (McGuigan, 1958), the personality of the student (Nelson, Blake, Morton and Olmstead, 1956), the peer group's approval (Rosenburg, 1956) and the student's perception of the outcome (Carlson, 1956). Lehman (1961) observed that informal, non-academic experiences were more influential in effecting change than formal academic experiences.

Prince (1957) found that when students' and instructors' value orientations were similar, students were more likely to perceive their teachers' behavior as effective. He concluded that value orientation studies were of importance because of the influence of values on the decisions of curriculum planners.

Lehmann and Payne (1963) studied the attitude and value changes of college freshmen using Prince's Differential Values Inventory. They found that while instructors and courses had no effect on student values there appeared to be a significant relationship between informal extra-curricular activities and value changes. Their data also suggested that college attendance reinforced rather than modified values.

It was noteworthy that until the sixties control groups of non-college students were rarely included in research designs. Trent and Medsker (1968) found significant differences favoring college attendance in terms of autonomy, intellectual disposition, flexibility and tolerance between high school graduates who attended college and those who did not.

During the period of student protest which characterized much of the late fifties and sixties, concern for the impact of college on the development of student values and attitudes led to intensive study of this area in the United States. Katz and his associates (1968) reported that students became more liberal and open as a consequence of college attendance. However, they concluded that these changes did not result from any perceivable or rational effort on the part of the institution. Their findings led them to stress, the need for a curriculum to be relevant and developmental with respect to the student rather than based on the logic of specific disciplines. A similar appeal was made by contributors to Yamamoto's anthology, The College Student and His Culture (1968). In planning relevant curricula, designers should study the myths of the college student rather than the myths about him as a means of better understanding the student and his world.

Martin (1968) contended that a majority of contemporary students reflected an existentialist point of view. He claimed that since most colleges were in the hands of essentialists who stressed cognitive learning, this severely limited possibilities for innovative, developmental curriculum planning. Jencks and Riesman (1968) appeared to agree. They claimed that the academic profession has established an achievement-oriented society which has tended to substitute knowledge for wisdom, research for scholarship and teaching for learning.

The survey of research conducted by Cross in 1970 also tended to support this contention that the academic profession tends to limit innovative student learning experiences, at least with respect to community college students. She reported that researchers characterized these students' value systems as showing some consistency of interest, attitude and personality. Students were found to be little interested in abstract thinking or in originality and prone to be more conventional and rigid than students attending four-year colleges. Cross also suggested that, on the basis of limited research, students in occupationally-oriented programs were more likely to be motivated by extrinsic rewards than academically-oriented students.

Gue (1969:3) described values as being indirectly connected to the self-image and tied to the subconscious cultural, biological, intellectual and emotional systems of humans. He counselled educators to accept the enduring nature of values and the hazard that too sudden and/or too drastic value change may cause acute personality disorganization. Gue advised that values should be taught overtly so that they could later surface from the subconscious and be examined objectively.

Stein (1968) tested the hypothesis that certain attitudes would differentiate the successful from the unsuccessful low-ability community college entrant. Her findings suggested that successful low-ability students were more goal directed, more tolerant of general education requirements, and more flexible regarding teaching and learning methods.

SOCIOECONOMIC STATUS

As was indicated with respect to student aspirations and student values, researchers have concluded that at all educational levels an individual's ability to succeed is interwoven with his family background (Schoenfeldt, 1968; Folger, Astin and Bayer, 1969). Cross (1970:2) stated:

> . . . we know that socioeconomic status and academic ability are related, and that both influence who goes to college, where he goes, what his major is, and how long he stays.

She was supported by Sewell and Shah (1967). Following their exhaustive seven-year study of 10,321 Wisconsin students, they found that when intelligence was controlled socioeconomic status had a significant and direct effect on plans to attend college, attendance and graduation as well as considerable indirect effect on the level of educational attainment. They also concluded that for females the relative effect of socioeconomic status on these variables was greater than the effect of intelligence. For males, the reverse held true. Several studies (Darley, 1962; Medsker and Trent, 1965; Hewer, 1965) suggested that socioeconomic background may be more important than either ability or high school grades with respect to some specific variables: college attendance, type of college attended, choice of major and level of attainment. Cooley and Becker (1966) found the father's and mother's occupation to be effective in predicting a student's choice of post-secondary institution.

Schoenfeldt (1968) found that female students attending junior college came from above average socioeconomic backgrounds. However, a large proportion of the males tended to be either below average in ability and above average in socioeconomic status, or below average in socioeconomic status and above average in ability.

A consistent hierarchy based on socioeconomic and ability indices was reported following the American Council of Education study by Creager and Astin (1968) of 240,000 freshmen. This report revealed that while one half to two thirds of the fathers of students attending four-year colleges had some college education, this proportion dropped to less than one third for those attending junior colleges and to 15 per cent for those enrolled in two-year vocational programs. Knoell (1971:12) similarly reported that community college students tended to come from families without a college-going tradition, one or both parents having been high school drop-outs.

In eleven of seventeen two- to four-year studies Eckland (1964:44-49) found that a composite index of social class was a better predictor of college success than education, income and occupation used separately. He also concluded that social class was an important determinant of those students who drop out but transfer or return and subsequently graduate.

Cohen and Brawer (1970:32) noted that community college drop-outs tended to be enrolled for fewer units than persisters, suggesting as does much of the literature, that withdrawal is related to financial pressures. These researchers also found that drop-outs spent more time in outside employment than persisters. The research studies of Cohen and Brawer (1970:11) and Knoell (1971:12) indicated that the family income of community college students was so modest that there was little ability or inclination to finance post-secondary education. Berg and Axtell (1968), in their study of California community college students, noted a pervasive money problem. These researchers concluded that the consequent juggling of class and work schedules could weaken both academic performance and employment potential.

PERSONAL CHARACTERISTICS

Sex

Schindelka (1968:22) found the ratio of male to female students attending NAIT was approximately nine to one at the Southern Alberta Institute of Technology, and approximately four to one at the Northern Alberta Institute of Technology. These ratios were substantially higher than the three to one ratio found by Fisher in his survey of American junior colleges (1967).

There appears to be general agreement that men enrolled in transfer programs in community colleges scored significantly higher on ability tests than men enrolled in occupational programs (Nogle, 1965; Behm, 1967; Hakanson, 1967). For women in vocational programs there seems to be little difference in ability level except for those enrolled in health programs. These had higher College Guidance Placement scores on many measures than liberal arts women. There is also evidence that more women of moderate ability enter occupational curricula whereas men in occupational programs tend to have low-ability scores (Hankanson, 1967).

Age

Based on the findings of his study, Schindelka (1968:26) observed that approximately 90 per cent of his respondents attending the Alberta institutes of technology were between the ages of eighteen and twenty-five. He concluded that the institutes mainly trained young students with few older students taking advantage of the full-time day program.

A significant relationship between age and value orientation was shown by Knill (1963:8). He found that students tended to become less idealistic as they approached adulthood.

Keoyote (1971) reported no significant difference between the post-secondary plans of Alberta high school students and their age.

With regard to the relationship of age to student success Baron's (1968) study of Illinois junior college students found no significant relationship between age and grade point average.

Marital Status

Baron (1968) was unable to detect any relationship between successful and unsuccessful students in terms of their marital status. The criterion for determining success in that study was whether a student passed or failed.

STUDIES OF THE CHARACTERISTICS OF STUDENTS ENROLLED IN ALBERTA INSTITUTES OF TECHNOLOGY

Schindelka Thesis

"Characteristics of Students in the Alberta Institutes of Technology," a master's thesis, was completed by D.J.J. Schindelka in the Department of Educational Administration at the University of Alberta in 1968. The study examined the characteristics of full-time, day students attending Alberta institutes of technology to determine if facilities were serving post-secondary needs. The student characteristics surveyed were: sex, age, last school grade completed, size of high school attended, type of high school program taken and number of credits accumulated, hours of employment per week, and the distance of students' permanent residences from the city in which the institute was located. The data were analyzed using a cross tabulation computer program.

Schindelka noted that the largest number of students were enrolled in technology programs and that the permanent residence of approximately one quarter of the students surveyed was either beyond one hundred miles of the institutes or outside the province. He urged decentralization of services offered by the institutes and suggested that vocational and trade programs could be offered at additional centers such as community, regional or agricultural and vocational colleges. Schindelka also concluded that more consideration should be given to programs and facilities to attract and meet the post-secondary needs of a more diverse student population in terms of age, sex and educational background.

Puffer Thesis

In 1971 Karel Puffer, then Director of the Technology Division of the Northern Alberta Institute of Technology, completed a doctoral dissertation entitled "A Study of Student Characteristics at a Post-secondary Institute of Technology" at the University of Illinois. The purposes of the study were to establish the most important characteristics of technical students; to compare important characteristics of stayins and drop-outs; to develop a procedure for the study of student characteristics which may be used at other institutes;

and to develop a predictive instrument for the early indentification of drop-outs.

From a population of approximately 2,150 students enrolled in the Technology, Industrial and Business, and Vocational Divisions during the 1969-1970 academic year, stratified random samples of 138 freshmen stayins, 168 seniors and 106 freshmen drop-outs were drawn. The analyses of the data included distribution statistics, frequency tabulation, analysis of variance, chi-square analysis and correlation and discriminant analysis. Emphasis in these analyses was on the early identification of dropouts.

Withdrawal rates varied from 10 per cent to 35 per cent, with an average of 22 per cent. Several findings related to the socio-economic status of students, rural-urban origins and family relationships. With regard to a student's decision to attend the Institute, it was found that "the more important parental opinion had been in this decision, the more likely students had been to drop out" (132). It was also found that a larger proportion of rural than urban students persisted in their studies. Drop-outs received lower grades than stayins on grade twelve mathematics and social studies examinations, and received significantly lower grades during their first quarter at the Institute. Stayins reported significantly more often than drop-outs that they would be very disappointed if they failed to graduate. There were no significant differences between drop-outs and stayins with respect to age, marital status, type of living accommodation or how they financed their education (133). Employment prior to attending the Institute was found to be a significant predictor of urban stayins.

IMPLICATIONS FOR THE PRESENT STUDY

While there was an emphasis in the literature on the importance of information with respect to student characteristics for administrative, counselling, curricular and instructional decision making, few Canadian post-secondary non-university studies in this area have been made. Fewer still were the studies that focused on students in particular programs. The same situation existed for studies of the relationship of academic performance to student characteristics and the prediction of student success by these student variables.

While the review of the literature supported the conclusion that previous academic performance continues to be the best predictor of post-secondary academic success, it also suggested that students attending non-university educational institutions tended to be disadvantaged in terms of their educational and socioeconomic backgrounds. Therefore a need was evidenced for the study of such nonintellective student characteristics of this group as their high school and work background, their aspirations and objectives, their reasons for attending, their values and their socioeconomic background.

Problems were identified in the literature associated with the rapid contemporary cultural changes in society and the concomitant changes in students, and educational methodology, resources and facilities. These supported the need for not only this study but also the continuing study of student characteristics and their relevance to student performance.

Chapter 3

RESEARCH METHODOLOGY

This chapter describes the sample, outlines the preparation of the instrument used for data collection, explains the data collection procedures and outlines the methodology applied in the treatment of the data.

SELECTION OF THE SAMPLE

The samples were drawn in April, 1972 from the two-year programs offered by seven Business and Vocational Departments of the Business and Vocational Division (see Table 2). The total population in these programs was 384 distributed as indicated in Table 2. Samples of thirty-five students were randomly selected from students enrolled in six programs with the aid of a random number table. In the seventh program, the Medical Record Technician Program, all fifteen students were included.

INSTRUMENTATION

The instrument developed for this study (see Appendix A) contained items selected to supplement the student characteristics information presently stored in Institute data banks. Minimum duplication of these data was a consideration in the preparation of items. Questionnaires developed by Puffer (1971) and by Dennison

Table 2

Sample Selection and Data Collection

	Students Enrolled	Sample Size	Number of Questionnaires Distributed[1]	Response Rate		Number of Usable Responses (n)
				f	%	
BUSINESS DEPARTMENT						
Accounting & Finance	81	35	30	26	86.7	25[2]
Administrative Management	73	35	31	26	83.8	26
Marketing Administration	74	35	33	30	90.9	30
Computer Systems Technology	50	35	31	28	90.3	27[2]
VOCATIONAL DEPARTMENT						
Dietary Technician	40	35	34	29	85.3	29
Medical Record Librarian	16	16	16	16	100.0	15[2]
Secretarial Technology	50	35	34	28	82.4	26[2]
TOTALS	384	226	209	183	87.6	178

[1] The sample was drawn from departmental student files. When the instruments were distributed it was found that a number of the students could not be contacted or had withdrawn.

[2] Shrinkage was due to students who did not write third quarter examinations.

and Jones (1971) were also helpful in drafting items.

The introductory section of the questionnaire solicited demographic information respecting the student's name, program, sex and marital status. A question regarding age was placed at the end of the instrument because of its expected sensitivity for some individuals. The remainder of the questionnaire was divided into three parts.

Part A. Part A solicited information about the respondent's educational background and qualifications. In addition, questions designed to determine the student's aspirations and goal disposition and the factors he/she considered important when considering attending the Institute were posed.

Part B. The second part of the questionnaire consisted of the Differential Values Inventory (DVI) modified by Friesen at the University of Alberta in 1970. This inventory has also been used by Narine (1971), Barker (1972), Johnson (1972) and Vandenberg (1973). The Inventory comprises thirty-seven Likert-type items designed to determine the values held by respondents.

The Differential Values Inventory was originally developed by Prince in 1957 at the University of Chicago and contained sixty-four forced-choice items representing eight categories related to the traditional and emergent conceptualization of Getzels and Spindler. The following four traditional value and four emergent value groupings were established by Prince.

Traditional	Emergent
1. Work-success ethic	1. Sociability
2. Future-time orientation	2. Hedonistic tone
3. Personal independence	3. Group conformity
4. Rigid discipline	4. Other directed

Since the students' responses were in terms of degrees of agreement or disagreement with the statement, scores from one to five were given to each student for each item to which he responded. Items which produced loadings of less than .400 were discarded, and the twenty-nine items which produced loadings above .400 on the Varimax Rotated Factors on the eight subscales were selected by Friesen (Table 3). The factor analysis of all thirty-seven items on an eight factor loading is represented in Appendix B. Negative loadings were reflected so that mean scores could be interpreted on the basis that the higher the score the more characteristic it was of the factor. The individual's scores for each of the eight subscales were summed and thus, value orientation scores were obtained for each student on each of the eight subscales. Scores on the four traditional and four emergent subscales were then added so that an orientation score for each student was obtained.

Part C. The final section of the questionnaire solicited socioeconomic information about the student and his family.

Following the initial development of the instrument it was presented to the members of a graduate seminar in Educational Administration for discussion and suggestions. The comments and recommendations of Dr. A. Konrad, Dr. E. A. Holdaway and seminar

Table 3

SIGNIFICANT VARIMAX FACTOR ANALYSIS LOADINGS ON THE EIGHT VALUE SUBSCALES

Traditional

Subscales	Items	Communalities	Loadings
Work-success ethic	6	0.407	0.535
	13	0.534	0.673
	27	0.555	0.446
	34	0.531	0.616
	37	0.568	0.501
Future-time orientation	1	0.568	0.513
	8	0.741	0.811
	15	0.692	0.756
	29	0.640	0.690
Personal independence	9	0.578	0.692
	26	0.532	0.464
	31	0.408	0.515
	33	0.575	0.611
Rigid discipline	16	-0.692	-0.514
	22	0.559	0.643
	25	0.603	0.690
	32	0.575	0.682

Table 3 (continued)

Emergent

Subscales	Items	Communalities	Loadings
Sociability	24	0.599	0.607
	35	0.573	0.639
Hedonistic tone	2	0.653	0.799
	23	0.537	0.531
	30	0.665	0.792
	36	0.648	0.697
Group conformity	18	0.528	0.687
	21	0.602	0.701
Other directed	3	0.658	0.771
	7	0.683	0.761
	11	0.514	0.619
	14	0.540	0.459

participants were particularly helpful with respect to the wording and format of the instrument. A pilot test of the revised questionnaire was conducted, using thirty-six members of a class of second-year Institute business students. The final questionnaire incorporated many of the comments of these students together with suggestions made by administrative and instructional staff who cooperated in the distribution and collection of the questionnaires.

DATA COLLECTION

With the approval and cooperation of the Director of the Business and Vocational Division, the Business Department Head, the Vocational Department Head, and other instructional and administrative staff, the questionnaires were distributed during class time. Students cooperation was requested personally by the researcher and the directions at the beginning of the instrument were reviewed. It was stressed that respondents' answers would be kept confidential but that if they found a question they did not wish to answer it should be passed over. Three questionnaires were returned without names. Completed questionnaires were returned in sealed envelopes to administrators of each program. A follow-up collection was made following a phone call to those students who had not responded. The usable response rate for all subsamples was 85.2 per cent (Table 2).

STATISTICAL TREATMENT

Both parametric and nonparametric statistics were employed in the analyses of data. Nonparametric statistics were employed to obtain a description of the sample. Analyses provided frequency and percentage distributions of all responses to questionnaire items. The respondents were divided according to the program in which they were enrolled for descriptive purposes. Subsequently the programs were combined to obtain a description of the total sample.

To give an indication of the level of student success in his/her academic studies grade-point averages were arbitrarily divided into thirds, producing high, middle and low ranges.

Description of Statistical Tests

Chi square. The chi square test is a nonparametric test which compares observed frequencies with expected theoretical frequencies to determine the independence or association among variables. In this study the chi square test was applied to analyze categorical item responses to determine whether the degree of association between these variables and the criterion variable was significant. The test was applied to determine any significant association between (1) the variation among student level of success and (2) each of the independent variables: marital status, degree of family influence, post-graduate plans, mother's occupation and age. The test was not applied to the independent variable sex for the Vocational Department as its use would have been inappropriate given the all-female enrollment in the Vocational Department.

Pearson product-moment correlation coefficient. The Pearson product-moment correlation coefficient was used to determine the correlation between student emergent and traditional value orientations and student level of success.

One-way analysis of variance. The one-way analysis of variance is commonly used to test the significance of differences among means when more than two groups are involved. In this study the one-way analysis of variance was used to assess the relative magnitude of variation low, middle, and high third quarter grade-point averages with respect to student traditional or emergent orientations to determine whether the variations were significant.

Stepwise Multiple Regression Analysis

Ferguson (1971:390-403) claims that:

> The techniques of multiple correlation have practical application in occupational and scholastic selection when it becomes necessary to combine a number of variables to provide the best possible estimate of a criterion measure.

In this study a multiple regression model with grade-point average as the criterion and forty-three student characteristics as predictor variables was applied to the data.

With forty-three predictor variables the multiple regression equation was of the form:

$$Y = A_0 + B_1X_1 + B_2X_2 + B_3X_3 + \ldots + B_{43}X_{43}$$

where Y was the criterion variable (a grade-point average), A_0 was a constant, and X_1 to X_{43} were the student characteristic predictor variables listed in Table 1 and B_1 to B_{43} were the regression weights of each of the predictor variables.

The stepwise multiple regression used in this study is an extension of multiple regression analysis. While multiple regression analysis produces the best fit of a set of observations of independent and dependent variables using the equation noted in the preceding paragraph, stepwise multiple regression adds a number of intermediate regression equations to obtain essentially similar results. Efroymson (1960) explains that these intermediate equations

> . . . are obtained by adding one variable at a time and thus giving the following intermediate equations:
>
> $$Y = A_0 + B_1X_1$$
>
> $$Y = A_0 + B_1X_1 + B_2X_2$$
>
> $$Y = A_0 + B_1X_1 + B_2X_2 + B_3X_3$$
>
> The variable added is that one which makes the greatest improvement in 'goodness to fit'. The coefficients represent the best values when the equation is fitted by the specific variables in the equation.

A feature of the stepwise multiple regression procedure is that a significant variable entering the equation at an early stage sometimes becomes insignificant after a number of additional variables enter the equation. The insignificant variable is removed from the equation before another variable was added. As a consequence, only significant variables are included in the final regression.

Draper and Smith (1966:72) recommended the use of stepwise multiple regression analysis as the best of the variable selection procedures.

Levels of Significance

Siegel (1956:9) has recommended that in reporting research findings, the researcher should indicate the actual probability level associated with statistical findings. In accordance with this recommendation, actual probability levels were reported with the findings of this study. Probability levels were reported at the .001 level where the actual probability levels were found to be less than .001. For the purposes of discussion and description, findings with a probability level of less than or equal to .05 were referred to as being "significant."

Data Analyses

Student responses to the items on the questionnaire were punched onto IBM data cards. Five computer programs developed by the Division of Education Research, University of Alberta, were used for data analyses:

NONP10	to obtain frequency and percentage distributions
NONP10	to obtain a chi square analysis of non-parametric data
DEST02	to obtain Pearson product-moment correlation coefficients
ANOV15	to obtain an F test for the analysis of variance
MULR06	to obtain a stepwise multiple regression analysis

CHAPTER SUMMARY

The selection of the sample from the seven two-year programs offered by NAIT Business and Vocational Departments and the collection of data took place in April, 1972. A usable response rate of 85.2 per cent was obtained.

The three-part instrument was designed to obtain student characteristics information with respect to demographic factors, educational and work background, aspirations, attendance factors considered important, values and socioeconomic variables. The questionnaire was revised after it was discussed by members of a graduate seminar and pilot tested by second-year business students.

The collected data were analyzed by both nonparametric and parametric statistics to obtain a description of the sample and to determine the independence or association among student characteristic variables and the level of student academic success. The statistical tests employed were the chi square, Pearson product-moment correlation coefficient, one-way analysis of variance and stepwise multiple regression analysis. Data analyses were effected through the use of five computer programs developed by the Division of Educational Research, University of Alberta.

Chapter 4

DESCRIPTION OF THE SAMPLE

This chapter provides a description of the sample based on the data collected. No detailed description of the data gathered by the Differential Values Inventory was included. However, their data were used in Chapter 5.

PERSONAL CHARACTERISTICS

Three basic demographic factors were surveyed: sex, age and marital status.

Sex

The division of the sample on the basis of sex resulted in a nearly equal representation of sexes in the total sample as shown in Table 4 of this study. Only 24 (22.2 per cent) of the respondents enrolled in Business Department programs were female while 100 per cent of the students in the vocational programs studied (i.e. Dietary Technician, Medical Record Librarian and Secretarial Technology) were female.

Age

Almost half (45.5 per cent) of the students in the sample were either eighteen or nineteen years old. A large proportion (87.2 per cent) were twenty-two years of age or under. A

Table 4

Distribution of Student Responses by Sex

	n	Male f	Male %	Female f	Female %
BUSINESS DEPARTMENT					
Accounting & Finance	25	22	88.0	3	12.0
Administrative Management	26	23	88.5	3	11.5
Marketing Administration	30	17	56.7	13	43.3
Computer System Technology	27	22	81.5	5	18.5
Subsample Totals	108	84	77.8	24	22.2
VOCATIONAL DEPARTMENT					
Dietary Technician	29	No males in programs		29	100.0
Medical Record Librarian	15			15	100.0
Secretarial Technology	26			26	100.0
Subsample Totals	70			70	100.0
TOTAL SAMPLE	178	84	47.2	94	52.8

relatively small number (26) of the students in the total sample were eighteen years of age and of these, the Computer Systems Technology, the Dietary Technician and the Secretarial Technology programs accounted for 18 (Table 5). A majority of the respondents (55.1 per cent) were either nineteen or twenty years of age. Very few students (eight) in the all-female Vocational Department programs were over the age of twenty-one.

The age range from twenty-three to thirty accounted for 13.9 per cent of the Business Department subsample. The programs surveyed appeared to have attracted few older students; only 3.9 per cent of the total were thirty years of age or older.

Marital Status

As might be expected, given the age distribution of the sample, a very high proportion (86.5 per cent) of the students were single (Table 6). Only 10.7 per cent were married and 2.3 per cent divorced or separated.

STUDENT HIGH SCHOOL AND WORK BACKGROUND

A number of factors related to students' high school background were surveyed. These were: the size of high school attended; the degree of student satisfaction; the extent of participation in extra-curricular activities; the degree of perceived friendliness of peers; the frequency in using counselling services; the academic qualifications of the student and the high school program in which he/she was enrolled.

Table 5

Distribution of Student Responses by Age in Years

		18		19		20		21		22		23—30		30+	
	n	f	%	f	%	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT															
Accounting & Finance	25	3	12.0	6	24.0	6	24.0	2	8.0	2	8.0	6	24.0	2	8.0
Administrative Management	26	1	3.8	8	30.8	10	38.5	4	15.4	1	3.8	1	3.8	1	3.8
Marketing Administration	30	4	13.3	6	20.0	8	26.7	3	10.0	4	13.3	5	16.6	0	0.0
Computer Systems Technology	27	6	22.2	5	18.5	5	18.5	4	14.8	4	14.8	3	11.1	0	0.0
Subsample Totals	108	14	12.9	25	23.2	29	26.9	11	10.2	11	10.2	15	13.9	3	2.7
VOCATIONAL DEPARTMENT															
Dietary Technician	29	5	17.2	9	31.0	11	37.9	1	3.4	2	6.9	0	0.0	1	3.4
Medical Record Librarian	15	0	0.0	9	60.0	2	13.3	2	13.3	0	0.0	0	0.0	2	13.3
Secretarial Technology	26	7	26.9	12	46.2	1	3.8	3	11.5	1	3.8	1	3.8	1	3.8
Subsample Totals	70	12	17.1	30	42.9	14	20.0	6	8.6	3	4.3	1	1.4	4	5.7
TOTAL SAMPLE	178	26	14.6	55	30.9	43	24.2	17	9.6	14	7.9	16	9.1	7	3.9

Table 6

Distribution of Student Responses by Marital Status

		Single		Married		Divorced, Separated or Widowed	
	n	f	%	f	%	f	%
BUSINESS DEPARTMENT							
Accounting & Finance	25	20	80.0	4	16.0	1	4.0
Administrative Management	26	22	84.6	4	15.4	0	0.0
Marketing Administration	30	27	90.0	2	6.7	1	3.3
Computer Systems Technology	27	23	85.2	4	14.8	0	0.0
Subsample Totals	108	92	85.2	14	13.0	2	1.8
VOCATIONAL DEPARTMENT							
Dietary Technician	28	25	86.2	2	6.9	1	3.4
Medical Record Librarian	15	13	86.7	2	13.3	0	0.0
Secretarial Technology	26	24	92.3	1	3.8	1	3.8
Subsample Totals	69	62	89.9	5	7.2	2	2.9
TOTAL SAMPLE	177	154	87.0	19	10.7	4	2.3

These factors were selected on a number of bases, the foremost of which was a review of the literature. Other influences on the selection process were the constructive comments of colleagues, and Institute instructors and administrators.

High School Size

As illustrated in Table 7, 46.1 per cent of the students in the sample attended relatively large secondary schools (1,100 or more students), 15.7 per cent attended relatively small schools (under 300 students). Compared to other programs few of the students in samples drawn from Administrative Finance and Computer Systems Technology reported attendance in smaller secondary institutions (8.0 and 3.7 per cent, respectively). A majority of respondents enrolled in the Administrative Management program attended either small (26.9 per cent) or relatively large (69.2 per cent) high schools.

Student Role Satisfaction

Very few (2.2 per cent) of the respondents expressed a dislike for their role as high school students. A substantial majority (69.7 per cent) either liked being high school students "very much" or "quite a bit" (Table 8).

Extent of Extra-curricular Activity

The extent or level of student extra-curricular activity while in high school was scored on a four-point scale ranging from "very active" to "not active." Amost three quarters of the students responded that they had been either moderately active (40.7 per cent) or not active (33.3 per cent) in extra-curricular activities. This

Table 7

Distribution of Student Responses by High School Size

		0—300		301—500		500—700		701—1100		1100 +	
	n	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT											
Accounting & Finance	25	2	8.0	3	12.0	5	20.0	5	20.0	10	40.0
Administrative Management	26	7	26.9	1	3.8	0	0.0	5	19.2	13	50.0
Marketing Administration	30	4	13.3	6	20.0	4	13.3	1	3.3	15	50.0
Computer Systems Technology	27	1	3.7	4	14.8	2	7.4	4	14.8	16	59.3
Subsample Totals	108	14	13.0	14	13.0	11	10.2	15	13.9	54	50.0
VOCATIONAL DEPARTMENT											
Dietary Technician	29	5	17.2	3	10.3	2	6.9	4	13.8	15	51.7
Medical Record Librarian	15	4	26.6	3	20.0	2	13.3	0	0.0	6	40.0
Secretarial Technology	26	5	19.2	6	23.1	5	19.2	3	11.5	7	26.9
Subsample Totals	70	14	20.0	12	17.1	9	12.9	7	10.0	28	40.0
TOTAL SAMPLE	178	28	15.7	26	14.6	20	11.2	22	12.3	82	46.1

Table 8

Distribution of Student Responses by Liking for High School Student Role

	n	Very Much		Quite a Bit		Some		Not at all	
		f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	4	16.0	7	28.0	13	52.0	1	4.0
Administrative Management	26	3	11.5	11	42.3	11	42.3	1	3.8
Marketing Administration	30	2	6.7	15	50.0	13	43.3	0	0.0
Computer Systems Technology	27	5	18.5	14	51.9	7	25.9	1	3.7
Subsample Totals									
VOCATIONAL DEPARTMENT									
Dietary Technician	29	9	31.0	18	62.1	2	6.9	0	0.0
Medical Record Librarian	15	4	26.7	10	66.7	0	0.0	1	6.7
Secretarial Technology	26	7	26.9	15	57.7	4	15.4	0	0.0
Subsample Totals	70	20	28.6	43	61.4	6	8.6	1	1.4
TOTAL SAMPLE	178	34	19.1	90	50.6	50	28.1	4	2.2

low level of extra-curricular participation was also found in the Vocational Department subsample; 64.3 per cent of this group also signified that they were either "somewhat active" or "not active." However, more students in the Vocational Department (32.9 per cent as against 19.4 per cent) indicated that they had been "quite active" extra-curricularly (Table 9).

Perception of Peer Friendliness

Students in the sample were asked to register their perception of the degree of friendliness of their high school peers. No student perceived their peers to be "not friendly at all." Almost 26 per cent of the Vocational Department students scored their peers "very friendly" as against 13 per cent of the Business Department students. Students generally found their peers to be either "quite friendly" (57.9 per cent) or "somewhat friendly" (24.2 per cent) (Table 10).

Frequency in Use of Counselling Services

A moderate (four to six times) to low (one to three times) frequency in the use of counselling services available in high schools was noted by a majority of the respondents (64.6 per cent). Almost 30 per cent of the students surveyed indicated that they had not used the counselling service (20.8 per cent) or that there was no service available (9.0 per cent) in their high schools.

Students in the Marketing Administration, Dietary Technician and Secretarial Technology programs reported a relatively high frequency of counselling use. Over a quarter of the students in each of these programs (26.6, 31.0 and 26.9 per cent, respectively)

Table 9

Distribution of Student Responses by Level of Extra-Curricular Activity

	n	Very Active f	Very Active %	Quite Active f	Quite Active %	Somewhat Active f	Somewhat Active %	Not Active f	Not Active %
BUSINESS DEPARTMENT									
Accounting & Finance	25	1	4.0	4	16.0	9	36.0	11	44.0
Administrative Management	26	0	0.0	4	15.4	16	61.5	6	23.1
Marketing Administration	30	3	10.0	6	20.0	13	43.3	8	26.7
Computer Systems Technology	27	3	11.1	7	25.9	6	22.2	11	40.7
Subsample Totals	108	7	6.5	21	19.4	44	40.7	36	33.3
VOCATIONAL DEPARTMENT									
Dietary Technician	29	2	6.9	11	37.9	6	20.7	10	34.5
Medical Record Librarian	15	0	0.0	4	26.7	9	60.0	2	13.3
Secretarial Technology	26	0	0.0	8	30.8	12	46.2	6	23.1
Subsampls Totals	70	2	2.9	23	32.9	27	38.6	18	25.7
TOTAL SAMPLE	178	9	5.1	44	24.7	71	39.9	54	30.3

Table 10

Distribution of Student Responses by Perception of Peer Friendliness

	n	Very Friendly		Quite Friendly		Somewhat Friendly		Not Friendly	
		f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	5	20.0	12	48.0	8	32.0	0	0.0
Administrative Management	26	6	23.1	15	57.7	5	19.2	0	0.0
Marketing Administration	30	1	3.3	16	53.3	13	43.3	0	0.0
Computer Systems Technology	27	2	7.4	20	74.1	5	18.5	0	0.0
Subsample Totals	108	14	13.0	63	58.3	31	28.7	0	0.0
VOCATIONAL DEPARTMENT									
Dietary Technician	29	6	20.7	17	58.6	6	20.7	0	0.0
Medical Record Librarian	15	4	26.7	10	66.7	1	6.7	0	0.0
Secretarial Technology	26	8	30.8	13	50.0	5	19.2	0	0.0
Subsample Totals	70	18	25.8	40	57.1	12	17.1	0	0.0
TOTAL SAMPLE	178	32	18.0	103	57.9	43	24.2	0	0.0

responded that they had made use of their high school counselling service on four or more occasions (Table 11).

High School Program

Three fifths of the students indicated that they had been enrolled in high school programs leading to university entrance. One of these students had been in a Technical Matriculation pattern; the remainder had been in a Senior Matriculation pattern.

Twenty-three per cent had been enrolled in the General Matriculation (diploma) pattern. Relatively few students (13.4 per cent) had been enrolled in Technical, Vocational or Business Certificate patterns (Table 12).

High School Academic Qualifications

The data gathered relative to student high school academic qualifications revealed that of the students enrolled in high school programs leading to university entrance, 65.8 per cent attained that level of academic qualification. Over half of the total sample had received high school diplomas. Only four per cent of the respondents came to the Institute with neither a high school diploma nor university entrance qualification.

Of the students enrolled in the Medical Records Librarian program, 93.3 per cent possessed university entrance. The second most highly academically qualified group were those in the Computer Systems Technology program: 51.8 per cent possessed university entrance qualifications (Table 13).

Table 11

Distribution of Student Responses by Use of Counselling Services

	n	No Service f	No Service %	1—3 times f	1—3 times %	4—6 times f	4—6 times %	7 or more times f	7 or more times %	Never f	Never %
BUSINESS DEPARTMENT											
Accounting & Finance	25	2	8.0	14	56.0	1	4.0	0	0.0	8	32.0
Administrative Management	26	4	15.4	16	61.5	2	7.7	1	3.8	3	11.5
Marketing Administration	30	1	3.3	14	46.7	4	13.3	4	13.3	7	23.3
Computer Systems Technology	27	2	7.4	17	63.0	2	7.4	1	3.7	5	18.5
Subsample Totals	108	9	8.3	61	56.5	9	8.3	6	5.6	23	21.2
VOCATIONAL DEPARTMENT											
Dietary Technician	29	2	6.9	14	48.3	6	20.7	3	10.3	4	13.8
Medical Record Librarian	15	3	20.0	9	60.0	0	0.0	0	0.0	3	20.0
Secretarial Technology	26	2	7.7	10	38.5	6	23.1	1	3.8	7	26.9
Subsample Totals	70	7	10.0	33	47.1	12	17.1	4	5.7	14	20.0
TOTAL SAMPLE	178	16	9.0	94	52.8	21	11.8	10	5.6	37	20.8

Table 12

Distribution of Student Responses by High School Program

		Senior Matric./ Univ. Entrance		General Matriculation Diploma		Certificates or Diplomas Technical/Business/Vocational		Other	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	11	44.0	9	36.0	3	12.0	2	8.0
Administrative Management	26	13	50.0	10	38.5	3	11.5	0	0.0
Marketing Administration	30	22	73.3	3	10.0	5	16.6	0	0.0
Computer Systems Technology	27	19	70.4	5	18.5	3	11.1	0	0.0
Subsample Totals	108	65	60.2	27	25.0	14	13.0	2	1.9
VOCATIONAL DEPARTMENT									
Dietary Technician	29	19	65.5	7	24.1	3	10.3	0	0.0
Medical Record Librarian	15	14	93.3	1	6.7	0	0.0	0	0.0
Secretarial Technology	26	13	50.0	6	23.1	7	26.9	0	0.0
Subsample Totals	70	46	65.7	14	20.0	10	14.3	0	0.0
TOTAL SAMPLE	178	111	62.4	41	23.0	24	13.4	2	1.1

Table 13

Distribution of Student Responses by Present High School Academic Qualifications

		No Diploma or Matriculation		Diploma One Mark Under 50		Diploma		Almost Matriculation Av. Under 60%		University Entrance Eng.30		University Entrance Math.30 or 31, Eng.30	
BUSINESS DEPARTMENT	n	f	%	f	%	f	%	f	%	f	%	f	%
Accounting & Finance	25	2	8.0	2	8.0	7	28.0	6	24.0	2	8.0	6	24.0
Administrative Management	26	2	7.7	3	11.5	6	23.1	8	30.8	0	0.0	7	26.9
Marketing Administration	30	0	0.0	0	0.0	8	26.7	12	20.0	0	0.0	10	33.3
Computer Systems Technology	27	1	3.7	0	0.0	5	18.5	7	25.9	1	3.7	13	48.1
Subsample Totals	108	5	4.6	5	4.6	26	24.1	33	30.6	3	7.8	36	33.3
VOCATIONAL DEPARTMENT													
Dietary Technician	29	1	3.4	2	6.9	9	31.0	6	20.7	2	6.9	9	31.0
Medical Record Librarian	15	0	0.0	0	0.0	1	6.7	0	0.0	3	20.0	11	73.3
Secretarial Technology	26	1	3.8	5	19.2	8	30.8	3	11.5	3	11.5	6	23.1
Subsample Totals	70	2	2.9	7	10.0	18	25.7	9	12.9	8	11.4	26	37.1
TOTAL SAMPLE	178	7	3.9	12	6.7	44	24.7	42	23.6	11	6.2	62	34.8

Duration of Work Prior to Enrollment

Approximately two fifths of the students surveyed had been employed for periods in excess of seven months prior to their enrollment in Institute programs. Of these, 12.4 per cent worked over one year but less than two years, and 14.6 per cent worked two years or longer.

A majority of the respondents (57.9 per cent) either did not work after leaving high school (20.8 per cent) or worked six months or less (37.1 per cent) (Table 14).

STUDENT ASPIRATIONS AND OBJECTIVES

Six items on the questionnaire were designed to obtain information concerning the students' aspirations and objectives. These items sought data with regard to the time when the student decided to attend NAIT, the degree of family influence on attendance, the degree that the student perceived completion of the program to be important, the degree that the student held good grades to be important, the student's post-graduation plans, and the student's income expectations after graduation.

The six items that were chosen to examine the aspirations and objectives of students in the seven programs were selected on the basis of the review of the literature.

Time Decision Was Made to Attend NAIT

Although 46.6 per cent of the sample made the decision to attend the Institute while attending high school, 18 per cent made

Table 14

Distribution of Student Responses by Duration of Work Prior to Attending NAIT

		Did Not Work		0—6 Months		7—12 Months		Over 1 Year but Less than 2 Years		2 Years and Over	
	n	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT											
Accounting & Finance	25	1	4.0	10	40.0	3	12.0	4	16.0	7	28.0
Administrative Management	26	4	15.4	6	23.1	9	34.6	4	75.4	3	11.5
Marketing Administration	30	6	20.0	8	26.7	7	23.3	5	16.7	4	13.3
Computer Systems Technology	27	7	25.9	10	37.0	1	3.7	5	18.5	4	14.8
Subsample Totals	108	18	16.6	34	31.5	20	18.5	18	16.6	18	16.6
VOCATIONAL DEPARTMENT											
Dietary Technician	29	7	24.1	15	51.7	3	10.3	2	6.9	2	6.9
Medical Record Librarian	15	6	40.0	2	13.3	3	20.0	1	6.7	3	20.0
Secretarial Technology	26	6	23.1	15	57.7	1	3.8	1	3.8	3	11.5
Subsample Totals	70	19	27.1	32	45.7	7	10.0	4	7.0	8	11.4
TOTAL SAMPLE	178	37	20.8	66	37.1	27	15.2	22	12.4	26	14.6

this decision after completing high school and 32 per cent after working six months or more (Table 15). These findings were compatible with those indicating that 42.2 per cent of the sample worked seven months or more after leaving high school and prior to attending NAIT.

Degree of Parental Influence on Attendance

A higher percentage of the all-female vocational respondents than the coed students in business programs reported that their families were more eager than they for them to attend the Institute (10 per cent compared with 7.4 per cent). For the total sample, 60.1 per cent answered that they and their families mutually agreed on the importance of their attendance. An almost equal percentage of students in both business and vocational subgroups, 16.7 per cent and 17.2 per cent, respectively, indicated that they were more eager to attend the Institute than their families were to have them enroll (Table 16).

Importance Given to Good Grades

The importance given to the attainment of good grades was evident from the analysis of data; 42.7 per cent of the sample indicated that good grades were "very important" to them and 45.5 per cent that they were "quite important."

Business Department respondents in the Administrative Management and Computer Systems Technology programs registered the lowest percentages in the "very important" category (3.8 and 11.1 per cent, respectively). Vocational Department respondents in the Medical Records Librarian and Secretarial Technology programs placed the highest importance on the achievement of good grades (66.7 and 57.7

Table 15

Distribution of Student Responses by Time Decision to Attend NAIT was Made

	n	In Junior High School f	In Junior High School %	In High School f	In High School %	After Completion of High School f	After Completion of High School %	After Working Six Months or More f	After Working Six Months or More %
BUSINESS DEPARTMENT									
Accounting & Finance	25	1	4.0	11	44.0	3	12.0	10	40.0
Administrative Management	26	1	3.8	11	42.3	4	15.4	10	38.5
Marketing Administration	30	0	0.0	9	30.0	7	23.3	14	46.7
Computer Systems Technology	27	1	3.7	12	44.4	7	25.9	7	25.9
Subsample Totals	108	3	2.8	43	39.8	21	19.4	41	38.0
VOCATIONAL DEPARTMENT									
Dietary Technician	29	2	6.9	19	65.5	5	17.2	3	10.3
Medical Record Librarian	15	0	0.0	5	33.3	3	20.0	7	46.7
Secretarial Technology	26	1	3.8	16	61.5	3	11.5	6	23.1
Subsample Totals	70	3	4.3	40	57.14	11	15.7	16	22.9
TOTAL SAMPLE	178	6	3.4	83	46.6	32	18.0	57	32.0

Table 16

Distribution of Student Responses by Degree of Parental Influence on Attendance

		Parental Influence Paramount re Attendance		Parents and Student were Agreed on Importance of Attendance		Student Decision Most Influential re Attendance		Categories Given Not Appropriate	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	2	8.0	13	52.0	6	24.0	4	16.0
Administrative Management	26	1	3.8	20	76.9	3	11.5	2	7.7
Marketing Administration	30	2	6.7	19	63.3	4	13.3	5	16.7
Computer Systems Technology	27	3	11.1	15	55.6	5	18.5	4	14.8
Subsample Totals	108	8	7.4	67	62.0	18	16.7	15	13.9
VOCATIONAL DEPARTMENT									
Dietary Technician	29	3	10.3	16	55.2	5	17.2	5	17.2
Medical Record Librarian	15	1	6.7	8	53.3	4	26.7	2	13.3
Secretarial Technology	26	3	11.5	16	61.5	3	11.5	4	15.4
Subsample Totals	70	7	10.0	40	57.1	12	17.2	11	15.7
TOTAL SAMPLE	178	15	8.4	107	60.1	30	16.9	26	14.6

per cent respectively) (Table 17).

Importance Given to Program Completion

In response to the closely related question: "How important is it to you that you complete your program?" 70.8 per cent of the sample indicated that completion was "very important" to them.

Respondents in the Administrative Management and Computer Systems Technology programs registered the lowest percentages (26.9 and 40.7 per cent, respectively) with respect to the importance placed on program completion. Respondents in the Medical Records Librarian and Dietary Technician programs placed the highest degree of importance on program completion (80.0 and 79.3 per cent, respectively) (Table 18). The difference in findings between this and the preceding item (i.e. importance of good grades) was understandable given the fact that many Secretarial Technology students accept jobs following the first year of their two-year program and therefore may have placed less importance on completion.

Post Graduation Plans

Securing a job was the paramount objective following graduation for a large majority (81.4 per cent) of the students. Of this group, approximately half signified that they also intended to either marry or to continue their education. More students in Business Department programs than in Vocational Department programs identified a full-time job plus education as their prime objective (26.9 per cent compared to 12.9 per cent).

Only six students specified that further education was their main objective after graduation. Three of these students were

Table 17

Distribution of Student Responses by Importance to Student of Good Grades

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	10	40.0	13	52.0	2	8.0	0	0.0
Administrative Management	26	1	3.8	20	76.9	3	11.5	2	7.7
Marketing Administration	30	13	43.3	9	30.0	7	23.3	1	3.3
Computer Systems Technology	27	3	11.1	15	55.6	5	18.5	4	14.8
Subsample Totals	108	27	25.0	57	52.8	17	15.8	7	6.5
VOCATIONAL DEPARTMENT									
Dietary Technician	29	10	34.5	17	58.6	2	6.9	0	0.0
Medical Record Librarian	15	10	66.7	3	20.0	1	6.7	1	6.7
Secretarial Technology	26	15	57.7	10	38.5	1	3.8	0	0.0
Subsample Totals	70	35	50.0	30	42.9	4	5.7	1	1.4
TOTAL SAMPLE	178	76	42.7	81	45.5	18	10.1	3	1.7

Table 18

Distribution of Student Responses by Importance to Student of Program Completion

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	19	76.0	6	24.0	0	0.0	0	0.0
Administrative Management	26	7	26.9	15	57.7	4	15.4	0	0.0
Marketing Administration	30	20	66.7	5	16.7	2	6.7	3	10.0
Computer Systems Technology	27	11	40.7	14	51.9	1	3.7	1	3.7
Subsample Totals	108	57	58.8	40	37.0	7	6.5	4	3.7
VOCATIONAL DEPARTMENT									
Dietary Technician	29	23	79.3	5	17.2	1	3.4	0	0.0
Medical Record Librarian	15	12	80.0	3	20.0	0	0.0	0	0.0
Secretarial Technology	26	17	65.4	9	34.6	0	0.0	0	0.0
Subsample Totals	70	52	74.3	17	24.3	1	1.4	0	0.0
TOTAL SAMPLE	178	126	70.8	43	24.2	6	3.4	3	1.7

enrolled in Computer Systems Technology and two in Secretarial Technology.

Students were asked to specify any other specific plan that they might have following their graduation. One student specified marriage; five had marriage and continued education as their objective; nine planned to obtain a job and to travel (Table 19).

Earning Expectations

The earning expectations of students in the sample covered a broad range. Generally the coeducational Business Department subsample held considerably higher earning expectations than the all-female Vocational Department subsample. Thirty-eight per cent of the Business students expected to attain an annual income level of $25,000 or over during their lifetimes. Of these 53.3 per cent of the students in the Marketing Administration sample expected to attain this high level of income.

In contrast, the highest level of annual earnings expected by Vocational Department respondents was $11,000 to $14,999 (10.7 per cent). Seventy-eight point six per cent of these students expected to attain an annual income level of less than $9,000 during their lifetime (Table 20).

FACTORS OF IMPORTANCE TO STUDENTS WHEN CONSIDERING ATTENDANCE AT NAIT

Respondents were asked to indicate the importance they placed on ten specified variables when they were considering attending the Institute. In addition they were asked to specify any

Table 19

Distribution of Student Responses by Post-Graduation Plans

		Job		Job Plus Education		Job Plus Marriage		Continue Education		Other		Undecided	
	n	f	%	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT													
Accounting & Finance	25	6	24.0	8	32.0	5	20.0	0	0.0	1	4.0	5	20.0
Administrative Management	26	11	42.3	9	34.6	4	15.4	0	0.0	0	0.0	2	7.7
Marketing Administration	30	10	33.3	9	30.0	6	20.0	1	3.3	3	10.0	1	3.3
Computer Systems Technology	27	12	44.4	3	11.1	4	14.8	3	11.1	3	11.1	2	7.4
Subsample Totals	108	39	36.1	29	26.9	19	17.6	4	3.7	7	6.4	10	9.3
VOCATIONAL DEPARTMENT													
Dietary Technician	29	10	34.5	4	13.8	7	24.1	0	0.0	7	24.1	1	3.4
Medical Record Librarian	15	8	53.3	2	13.3	5	33.3	0	0.0	0	0.0	0	0.0
Secretarial Technology	26	16	61.5	3	11.5	3	11.5	2	7.7	1	3.8	1	3.8
Subsample Totals	70	34	48.6	9	12.9	15	21.4	2	2.9	8	11.4	2	2.9
TOTAL SAMPLE	178	73	41.0	38	21.3	34	19.1	6	3.4	15	8.5	12	6.7

Table 20

Distribution of Student Responses by Post-Graduation Earning Expectations

		$3000—6999		$7000—8999		$9000—10,999		$11,000—14,999		$15,000—19,999		$20,000—24,999		$25,000 or More	
	n	f	%	f	%	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT															
Accounting & Finance	25	0	0.0	3	12.0	1	4.0	2	8.0	6	24.0	4	16.0	9	36.0
Administrative Management	26	0	0.0	2	7.7	0	0.0	5	19.2	4	15.4	6	23.1	9	34.6
Marketing Administration	30	2	6.6	3	10.0	2	6.7	4	13.3	2	6.7	1	3.3	16	53.3
Computer Systems Technology	27	2	7.4	2	7.4	1	3.7	5	18.5	6	22.2	4	14.8	7	25.9
Subsample Totals	108	4	3.7	10	9.3	4	3.7	16	14.8	18	16.7	15	13.9	41	38.0
VOCATIONAL DEPARTMENT															
Dietary Technician	29	8	27.6	15	51.7	6	20.7	0	0.0	0	0.0	0	0.0	0	0.0
Medical Record Librarian	15	2	13.3	9	60.0	3	20.0	1	6.7	0	0.0	0	0.0	0	0.0
Secretarial Technology	26	11	42.3	10	38.5	3	11.5	2	7.7	0	0.0	0	0.0	0	0.0
Subsample Totals	70	21	30.0	34	48.6	12	17.1	3	4.3	0	0.0	0	0.0	0	0.0
TOTAL SAMPLE	178	25	14.0	44	24.7	16	9.0	19	10.7	18	10.1	15	8.4	41	23.0

other variables of importance. Answers were given on a four-point scale from "very important" (1) to "not important" (4). The variables were selected with the intention of providing a comprehensive listing. The final item permitted students to enter other factors which were of importance to them.

Four of the variables related to students' programs: "teaching reputation," "friendly atmosphere," "athletic program" and "only place program offered." Of these variables the last two were held to be "not important" by a majority of the students (70.2 and 64.0 per cent, respectively). However, for a majority of the students, the "teaching reputation" of the Institute was either "very important" (15.7 per cent) or "quite important" 35.4 per cent). Almost half of the students rated "friendly atmosphere" as either "very important" (20.2 per cent) or "quite important" (28.1 per cent) (Tables 21, 22, 23, and 24).

Two variables of a convenience and financial nature which influenced students when they considered attending the Institute were "low cost" and "close to home." "Low cost" was "very important" or "quite important" to a majority (55.6 per cent) of the students. Only 15.2 per cent indicated that cost was not important to their decision. On the other hand, a majority of the total sample (52.2 per cent) responded that the proximity of the Institute to their homes was not an important factor when they were considering attendance (Tables 25 and 26).

Neither the influence of a friend attending the Institute nor the advice of parents or a spouse was considered "very" or "quite" important by a majority of the respondents. However, the

Table 21

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

TEACHING REPUTATION

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	7	28.0	9	36.0	5	20.0	4	16.0
Administrative Management	26	1	3.8	10	38.5	9	34.6	6	23.1
Marketing Administration	30	7	23.3	9	30.0	8	26.7	6	20.0
Computer Systems Technology	27	4	14.8	5	18.5	8	29.6	10	37.0
Subsample Totals	108	19	17.6	33	30.6	30	27.8	26	24.1
VOCATIONAL DEPARTMENT									
Dietary Technician	29	4	13.8	14	48.3	5	17.2	6	20.7
Medical Record Librarian	15	1	6.7	6	40.0	5	33.3	3	20.0
Secretarial Technology	26	4	15.4	10	38.5	7	26.9	5	19.2
Subsample Totals	70	9	12.9	30	42.9	17	24.3	14	20.0
TOTAL SAMPLE	178	28	15.7	63	35.4	47	26.4	40	22.5

Table 22

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

ATMOSPHERE

		Very Important		Quite Important		Somewhat Important		Not Important	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	4	16.0	6	24.0	9	36.0	6	24.0
Administrative Management	26	3	11.5	10	38.5	5	19.2	8	30.8
Marketing Administration	30	2	6.7	12	40.0	11	36.7	5	16.7
Computer Systems Technology	27	5	18.5	4	14.8	7	25.9	11	40.7
Subsample Totals	108	14	13.0	32	29.6	32	29.6	30	27.8
VOCATIONAL DEPARTMENT									
Dietary Technician	29	11	37.9	9	31.0	6	20.7	3	10.3
Medical Record Librarian	15	3	20.0	3	20.0	4	26.7	5	33.3
Secretarial Technology	26	8	30.8	6	23.1	8	30.8	4	15.4
Subsample Totals	70	22	31.4	18	25.7	18	25.7	12	17.1
TOTAL SAMPLE	178	36	20.2	50	28.1	50	28.1	42	23.6

Table 23

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

ATHLETIC PROGRAM

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	0	0.0	0	0.0	4	16.0	21	84.0
Administrative Management	26	0	0.0	4	15.4	6	23.1	16	61.5
Marketing Administration	30	0	0.0	2	6.7	2	6.7	26	86.7
Computer Systems Technology	27	0	0.0	3	11.1	6	22.2	18	66.7
Subsample Totals	108	0	0.0	9	8.3	18	16.7	81	75.0
VOCATIONAL DEPARTMENT									
Dietary Technician	29	1	3.4	5	17.2	4	13.8	19	65.5
Medical Record Librarian	15	0	0.0	2	13.3	2	13.3	11	73.3
Secretarial Technology	26	1	3.8	3	7.7	9	34.6	14	53.8
Subsample Totals	70	2	2.9	9	12.9	15	21.4	44	62.9
TOTAL SAMPLE	178	2	1.1	18	10.1	33	18.5	125	70.2

Table 24

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

UNIQUE PROGRAM

		Very Important		Quite Important		Somewhat Important		Not Important	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	0	0.0	3	12.0	3	12.0	19	76.0
Administrative Management	26	2	7.7	1	3.8	5	19.2	18	69.2
Marketing Administration	30	0	0.0	9	30.0	6	20.0	15	50.0
Computer Systems Technology	27	1	3.7	4	14.8	3	11.1	19	70.4
Subsample Totals	108	3	2.8	17	15.7	17	15.7	71	65.7
VOCATIONAL DEPARTMENT									
Dietary Technician	29	3	10.3	3	10.3	4	13.8	19	65.5
Medical Record Librarian	15	6	40.0	5	33.3	1	6.7	3	20.0
Secretarial Technology	26	1	3.8	1	3.8	3	11.5	21	80.8
Subsample Totals	70	10	14.3	9	12.9	8	11.4	43	61.4
TOTAL SAMPLE	178	13	7.3	26	14.6	25	14.0	114	64.0

Table 25

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

COST

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	10	40.0	5	20.0	4	16.0	6	24.0
Administrative Management	26	7	26.9	6	23.1	9	34.6	4	15.4
Marketing Administration	30	8	26.7	5	16.7	11	36.7	6	20.0
Computer Systems Technology	27	6	22.2	11	40.7	8	20.6	2	7.4
Subsample Totals	108	31	28.7	27	25.0	32	29.6	18	16.7
VOCATIONAL DEPARTMENT									
Dietary Technician	29	10	34.5	11	37.9	7	24.1	1	3.4
Medical Record Librarian	15	1	6.7	5	33.3	5	33.3	4	26.7
Secretarial Technology	26	7	26.9	7	26.9	8	30.8	4	15.4
Subsample Totals	70	18	25.7	23	32.9	20	28.6	9	12.9
TOTAL SAMPLE	178	49	27.5	50	28.1	52	29.2	27	15.2

Table 26

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

PROXIMITY TO HOME

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	1	4.0	4	16.0	6	24.0	14	56.0
Administrative Management	26	3	11.5	5	19.2	10	38.5	8	30.8
Marketing Administration	30	0	0.0	5	16.7	6	20.0	19	63.3
Computer Systems Technology	27	0	0.0	4	14.8	9	33.3	14	51.9
Subsample Totals	108	4	3.7	18	16.7	31	28.7	55	50.9
VOCATIONAL DEPARTMENT									
Dietary Technician	29	1	3.4	6	20.7	7	24.1	15	51.7
Medical Record Librarian	15	1	6.7	2	13.3	3	20.0	9	60.0
Secretarial Technology	26	0	0.0	4	15.4	8	30.8	14	53.8
Subsample Totals	70	2	2.9	12	17.1	19	27.1	38	54.3
TOTAL SAMPLE	178	6	3.4	30	16.9	49	27.5	93	52.2

latter factor was either "very" or "quite" important to almost a quarter of the students. The former factor was "very important" or "quite important" to only 10.7 per cent of the students (Tables 27 and 28).

The belief that "NAIT graduates get jobs" received the largest percentage of "very important" responses (38.6 per cent) of all the factors specified in the instrument. A further 40.0 per cent believed that this factor was "quite important" to them when they considered attending the Institute. Unemployment was "not important" to 70.4 per cent of the students in Business Department programs and to 62.9 per cent of those in Vocational Department programs (Tables 29 and 30).

Students were also asked to specify any other factor(s) which influenced their decision to attend the Institute. Most of the students who answered this questionnaire item indicated that the factor listed was very important to them. Specified factors included the practical nature of the program taken, the short duration of the course and entrance requirements (Table 31).

STUDENT SOCIOECONOMIC STATUS

Ten variables related to each respondent's socioeconomic status were surveyed. These were: the size of the student's community in the three years prior to attending NAIT; the father's socioeconomic status; the father's educational level; the mother's formal education and occupation; the number of brothers and sisters; the student's anticipated expense for the year; the source and amount of the student's financing and his/her expected debt accumulation; and the

Table 27

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

FRIEND ATTENDING

	n	Very Important f	Very Important %	Quite Important f	Quite Important %	Somewhat Important f	Somewhat Important %	Not Important f	Not Important %
BUSINESS DEPARTMENT									
Accounting & Finance	25	0	0.0	2	8.0	2	8.0	21	84.0
Administrative Management	26	1	3.8	2	7.7	1	3.8	22	84.6
Marketing Administration	30	0	0.0	2	6.7	3	10.0	25	83.3
Computer Systems Technology	27	0	0.0	3	11.1	6	22.2	18	16.7
Subsample Totals	108	1	0.9	9	8.3	12	11.1	86	79.6
VOCATIONAL DEPARTMENT									
Dietary Technician	29	1	3.4	5	17.2	3	10.3	20	69.0
Medical Record Librarian	15	1	6.7	1	6.7	0	0.0	13	86.7
Secretarial Technology	26	0	0.0	1	3.8	5	19.2	20	76.9
Subsample Totals	70	2	2.9	7	10.0	8	11.4	53	75.7
TOTAL SAMPLE	178	3	1.7	16	9.0	20	11.2	139	78.1

Table 28

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

ADVICE OF PARENTS OR SPOUSE

		Very Important		Quite Important		Somewhat Important		Not Important	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	1	4.0	3	12.0	9	36.0	12	48.0
Administrative Management	26	1	3.8	4	15.4	13	50.0	8	30.8
Marketing Administration	30	0	0.0	5	16.7	10	33.3	15	50.0
Computer Systems Technology	27	1	3.7	5	18.5	4	14.8	17	63.0
Subsample Totals	108	3	2.8	17	15.7	36	33.3	52	48.1
VOCATIONAL DEPARTMENT									
Dietary Technician	29	2	6.9	5	17.2	10	34.5	12	41.4
Medical Record Librarian	15	2	13.3	4	26.7	4	26.7	5	33.3
Secretarial Technology	26	3	11.5	7	26.9	5	19.2	11	42.3
Subsample Totals	70	7	10.0	16	22.9	19	27.1	28	40.0
TOTAL SAMPLE	178	10	5.6	33	18.5	55	30.9	80	44.9

Table 29

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

NAIT JOB PLACEMENT RECORD

		Very Important		Quite Important		Somewhat Important		Not Important	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	11	44.0	7	28.0	2	8.0	5	20.0
Administrative Management	26	14	53.8	5	19.2	6	23.1	1	3.8
Marketing Administration	30	15	50.0	7	23.3	6	20.0	2	6.7
Computer Systems Technology	27	12	44.4	7	25.9	6	22.2	2	7.4
Subsample Totals	108	52	48.1	26	24.1	20	18.5	10	9.3
VOCATIONAL DEPARTMENT									
Dietary Technician	29	9	31.0	15	51.7	3	10.3	2	6.9
Medical Record Librarian	15	5	33.3	5	33.3	1	6.7	4	26.7
Secretarial Technology	26	13	50.0	8	30.8	3	11.5	2	7.7
Subsample Totals	70	27	38.6	28	40.0	7	10.0	8	11.4
TOTAL SAMPLE	178	79	44.4	54	30.3	27	15.2	18	10.1

Table 30

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

EMPLOYMENT

		Very Important		Quite Important		Somewhat Important		Not Important	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	4	16.0	4	16.0	2	8.0	15	60.0
Administrative Management	26	2	7.7	2	7.7	3	11.5	19	73.1
Marketing Administration	30	1	3.3	4	13.3	5	16.7	20	66.7
Computer Systems Technology	27	0	0.0	3	11.1	2	7.4	22	81.5
Subsample Totals	108	7	6.5	13	12.0	12	11.1	76	70.4
VOCATIONAL DEPARTMENT									
Dietary Technician	29	1	3.4	3	10.3	5	17.2	20	69.0
Medical Record Librarian	15	2	13.3	1	6.7	1	6.7	11	73.3
Secretarial Technology	26	5	19.2	6	23.1	2	7.7	13	50.0
Subsample Totals	70	8	11.4	10	14.3	8	11.4	44	62.9
TOTAL SAMPLE	178	15	8.4	23	12.9	20	11.2	120	67.4

Table 31

Distribution of Student Responses by Factors of Importance When Considering Attendance at NAIT

OTHER SPECIFIED FACTORS

		Very Important		Quite Important		Somewhat Important		Not Important	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	1	4.0	0	0.0	0	0.0	0	0.0
Administrative Management	26	3	11.5	1	3.8	0	0.0	0	0.0
Marketing Administration	30	5	16.7	0	0.0	0	0.0	0	0.0
Computer Systems Technology	27	4	14.8	1	3.7	0	0.0	0	0.0
Subsample Totals	108	13	12.0	2	1.9	0	0.0	0	0.0
VOCATIONAL DEPARTMENT									
Dietary Technician	29	2	6.9	0	0.0	0	0.0	0	0.0
Medical Record Librarian	15	2	13.3	0	0.0	0	0.0	0	0.0
Secretarial Technology	26	1	3.8	0	0.0	0	0.0	0	0.0
Subsample Totals	70	5	7.1	0	0.0	0	0.0	0	0.0
TOTAL SAMPLE	178	18	10.1	2	1.1	0	0.0	0	0.0

parents' combined annual income.

The primary basis for the selection of variables was the review of the literature. Although the socioeconomic status of students' fathers was based on the fathers' occupations and educational levels, the latter was also reported separately so that a comparison could be made with the educational levels of students' mothers.

The first item in the third part of the instrument asked the student to describe the community in which he/she resided for the majority of the three years before coming to NAIT. This question was asked because it was thought that responses would give some indication of the student's socioeconomic status since rural incomes tend to be less than urban incomes. The responses to the question were also of value because of the demographic information they provided.

Size of Previous Community

Over three-fifths of the students registered in Business Department programs resided in municipalities with populations exceeding 50,000 during a majority of the three years preceeding their first year at the Institute. Computer Systems Technology students formed a somewhat atypical student subgroup with only 7.4 per cent coming from rural communities and 77.8 per cent from cities of over 50,000 populations.

More of the students in the all-female Vocational Department programs had rural backgrounds than in the coeducational Business Department programs (28.5 per cent compared to 19.4 per cent). This was particularly true for students in the Secretarial Technology program. Over one third of this subgroup came from rural communities and only 34.6 per cent came from larger municipalities (Table 32).

The Father's Socioeconomic Status

The Two Factor Index of Social Position developed by A. B. Hollingshead (1957) was used in estimating the positions held by respondents' fathers in the status structure of society. This index was premised on the assumptions that:

- a status structure exists in Canadian society;
- positions in this structure are determined by a few commonly accepted symbolic characteristics; and
- these characteristics can be scaled and combined to produce a reliable stratification

The two factors on which social position was based were occupation and education. A score for each of these factors was calculated to obtain a social class ranking on a five point scale, one being the highest class and five the lowest class on the continuum.

The distribution of student responses by father's socioeconomic status is shown in Table 33. The majority of respondents' answers to the items placed their fathers in either the third (38.8 per cent) or fourth (38.2 per cent) social class positions. The highest social class position accounted for 2.2 per cent, the second highest and lowest social class positions each accounted for 9.0 per cent of the total sample. Thus if Hollingshead's five class positions were to be interpreted using a common socioeconomic classification, the majority of students could be said to come from middle and lower middle class households.

Table 32

Distribution of Student Responses by Size of Community Student Resided in Prior to Coming to NAIT

		Rural		10,000 - 50,000		More than 50,000	
	n	f	%	f	%	f	%
BUSINESS DEPARTMENT							
Accounting & Finance	25	6	24.0	4	16.0	15	60.0
Administrative Management	26	7	26.9	2	7.6	17	65.4
Marketing Administration	30	6	20.0	10	33.3	14	46.7
Computer Systems Technology	27	2	7.4	4	14.8	21	77.8
Subsample Totals	108	21	19.4	20	18.5	67	62.0
VOCATIONAL DEPARTMENT							
Dietary Technician	29	8	27.6	8	27.6	13	44.8
Medical Record Librarian	15	3	20.0	3	20.0	9	60.0
Secretarial Technology	26	9	34.6	8	30.8	9	34.6
Subsample Totals	70	20	28.5	19	17.6	31	28.7
TOTAL SAMPLE	178	41	23.1	39	21.8	98	55.1

Table 33

Distribution of Student Responses by Father's Social Class

		I		II		III		IV		V	
	n	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT											
Accounting & Finance	25	1	4.0	15	60.0	8	32.0	1	4.0	0	0.0
Administrative Management	25	1	3.8	2	7.7	12	46.2	8	30.8	2	7.7
Marketing Administration	30	1	3.3	4	13.3	17	56.7	8	26.7	0	0.0
Computer Systems Technology	26	0	0.0	5	18.5	8	29.6	9	33.3	4	14.8
Subsample Totals	106	3	2.8	26	24.5	45	42.5	26	24.5	6	5.7
VOCATIONAL DEPARTMENT											
Dietary Technician	29	1	3.4	1	3.4	9	31.0	15	51.7	3	10.3
Medical Record Librarian	14	0	0.0	0	0.0	1	6.7	9	60.0	4	26.7
Secretarial Technology	24	0	0.0	4	15.4	7	26.9	11	42.3	2	7.7
Subsample Totals	67	1	1.5	5	7.5	17	25.4	35	52.2	9	13.4
TOTAL SAMPLE	173	4	2.2	16	9.0	69	38.8	68	38.2	16	9.0

The majority of the households of students in the Accounting and Finance program fell in Hollingshead's second social class position or the upper middle class. On the other hand, the majority of students in the Dietary Technician and Medical Record Librarian programs came from fourth social class or lower middle class households.

The Father's Educational Level

About half of the respondents' fathers had "no high school" (32.6 per cent) or "some high school" (16.9 per cent). This level of education was particularly typical of fathers of the all-female students in Vocational Department programs. In this group 58.6 per cent of the fathers either had "no high school" (42.9 per cent) or "some high school" (15.7 per cent). Four fifths of the fathers of female respondents in the Medical Record Librarian program had "no high school."

Almost a third of the sample (30.1 per cent) indicated that their fathers had acquired some post-secondary training or education. A small percentage (5.6 per cent) reported that their fathers had graduated from a university (Table 34).

The Mother's Educational Level

Fewer mothers (23 per cent) than fathers (32.6 per cent) were reported as having "no high school." Notable exceptions to this observed tendency of mothers of respondents to have attained a higher level of education than fathers were the mothers of Secretarial Technology students. Almost half (46.2 per cent) of these mothers were reported to have had "no high school."

Table 34

Distribution of Student Responses by Father's Educational Level

		No High School		Some High School		High School Completed		Technical or Vocational School		Some University		University Graduate		Do not know	
	n	f	%	f	%	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT															
Accounting & Finance	25	8	32.0	5	20.0	4	16.0	4	16.0	1	4.0	3	12.0	0	0.0
Administrative Management	25	7	26.9	4	15.4	2	7.7	5	19.2	0	0.0	2	7.6	5	19.2
Marketing Administration	30	7	23.3	7	23.3	2	6.7	8	26.7	4	13.3	0	0.0	2	6.7
Computer Systems Technology	27	6	22.2	3	11.1	4	14.8	8	29.6	2	7.4	2	7.4	2	7.4
Subsample Totals	107	28	26.2	19	17.8	12	11.2	25	23.4	7	6.5	7	6.5	9	8.3
VOCATIONAL DEPARTMENT															
Dietary Technician	29	8	27.6	5	17.2	1	3.4	9	31.0	1	3.4	2	6.8	3	10.3
Medical Record Librarian	15	12	80.0	1	6.7	0	0.0	2	13.3	0	0.0	0	0.0	0	0.0
Secretarial Technology	26	10	38.5	5	19.2	0	0.0	5	19.2	1	3.8	1	3.8	4	15.4
Subsample Totals	70	30	42.9	11	15.7	1	1.4	16	22.9	2	2.9	3	4.3	7	10.0
TOTAL SAMPLE	177	58	32.6	30	16.9	13	7.3	41	23.1	9	5.1	10	5.6	16	9.0

A somewhat smaller proportion of mothers than fathers (28.1 per cent as compared to 33.8 per cent) of respondents had acquired some post-secondary training or education (Table 35).

Mother's Occupation

A majority (73.8 per cent) of the mothers of students enrolled in business programs classified their mothers as housewives, homemakers, house managers, farm wives, etc. A further 22.3 per cent were employed on a full-time basis (Table 36).

A somewhat higher percentage (33.3 per cent) of the mothers of Vocational Department students than those of students in business programs worked full time; a further 62.1 per cent were designated as housewives.

Part-time jobs were held by only a small percentage of each subsample (Business: 3.9 per cent; Vocational: 4.6 per cent).

Number of Brothers and Sisters

A majority of the students (57.9 per cent) reported that they had three or more brothers and/or sisters. Over a fifth of the respondents enrolled in the Administration and Finance and the Marketing Administration programs had six or more brothers and/or sisters. Relatively few (20.8 per cent) students came from families with one or two children (Table 37).

Expected Expenditures for the Year

The distribution of student responses according to the expected expenditures for their first year at NAIT was shown for the total sample in Table 38.

Table 35

Distribution of Student Responses by Mother's Educational Level

		No High School		Some High School		High School Completed		Technical or Vocational School		Some University		University Graduate		Do not know	
	n	f	%	f	%	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT															
Accounting & Finance	25	6	24.0	6	24.0	7	28.0	5	20.0	0	0.0	1	4.0	0	0.0
Administrative Management	26	2	7.7	8	30.8	5	19.2	5	19.2	2	7.7	0	0.0	4	15.4
Marketing Administration	30	5	16.7	10	33.3	6	20.0	6	20.0	0	0.0	2	6.6	1	3.3
Computer Systems Technology	27	8	29.6	7	25.9	7	25.9	3	11.1	1	3.7	0	0.0	1	3.7
Subsample Totals	108	21	19.4	31	28.7	25	23.1	19	17.6	3	2.8	3	2.8	6	5.6
VOCATIONAL DEPARTMENT															
Dietary Technician	29	4	13.8	7	24.1	5	17.2	8	27.5	3	10.3	0	0.0	2	6.9
Medical Record Librarian	15	4	26.7	1	6.7	2	13.3	5	33.3	2	13.3	1	6.7	0	0.0
Secretarial Technology	26	12	46.2	2	7.7	1	3.8	5	19.2	1	3.8	0	0.0	5	19.2
Subsample Totals	70	20	28.6	10	14.3	8	11.4	18	25.7	6	8.6	1	1.4	7	10.0
TOTAL SAMPLE	178	41	23.0	41	23.0	33	18.5	37	20.8	9	5.1	4	2.2	13	7.3

Table 36

Distribution of Student Responses by Mother's Occupation

	n	Employed f	Employed %	Employed Part-time f	Employed Part-time %	Housewife f	Housewife %
BUSINESS DEPARTMENT							
Accounting & Finance	22	3	12.0	2	8.0	17	68.0
Administrative Management	26	5	19.2	0	0.0	21	80.8
Marketing Administration	30	11	36.7	1	3.3	18	60.0
Computer Systems Technology	25	4	14.8	1	3.7	20	74.1
Subsample Totals	103	23	22.3	4	3.9	76	73.8
VOCATIONAL DEPARTMENT							
Dietary Technician	27	7	24.1	1	3.4	19	65.5
Medical Record Librarian	15	7	46.7	0	0.0	8	53.3
Secretarial Technology	24	8	30.8	2	7.7	14	53.8
Subsample Totals	66	22	33.3	3	4.6	41	62.1
TOTAL SAMPLE	169	45	25.3	7	3.9	117	65.7

Table 37

Distribution of Student Responses by Number of Brothers and/or Sisters

		None		One		Two or Three		Four or Five		Six or More	
	n	f	%	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT											
Accounting & Finance	25	0	0.0	7	28.0	5	20.0	7	28.0	6	24.0
Administrative Management	26	2	7.7	5	19.2	11	42.3	7	26.9	1	3.8
Marketing Administration	30	1	3.3	3	10.0	16	53.4	3	10.0	7	23.3
Computer Systems Technology	27	1	3.7	2	7.4	12	44.4	10	37.0	2	7.4
Subsample Totals	108	4	3.7	17	15.7	44	40.7	27	25.0	16	14.8
VOCATIONAL DEPARTMENT											
Dietary Technician	29	1	3.4	6	20.7	10	34.5	8	27.5	4	13.8
Medical Record Librarian	15	0	0.0	5	33.3	7	46.7	3	20.0	0	0.0
Secretarial Technology	25	1	3.8	3	11.5	9	34.6	7	26.9	5	19.2
Subsample Totals	69	2	3.0	14	20.3	26	37.7	18	26.1	9	13.0
TOTAL SAMPLE	177	6	3.4	31	17.4	70	39.3	45	25.3	25	14.1

Table 38

Distribution of Student Responses by Expected Expenditures for their First Year at NAIT

	$0 - $100		$101-$200		$201-$300		$301-$400		$401-$500		$501-$600		$601 or More	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Tuition, Fees, Supplies	29	16.3	94	52.8	48	27.0	4	2.2	3	1.7	0	0.0	0	0.0
Room and Board	74	41.6	5	2.8	4	2.2	4	2.2	8	4.5	13	7.3	70	39.3
Clothing and Incidentals	28	15.7	53	29.8	43	24.2	24	13.5	13	7.3	9	5.1	8	4.4
Travel and Car	72	40.5	49	27.5	22	12.4	9	5.1	12	6.7	6	3.4	8	4.5
Other	136	76.4	9	3.1	11	6.2	5	2.8	7	3.9	2	1.1	8	4.5

n = 178

A majority of the students expected to spend between $101 and $200 for tuition, fees and supplies during the first year of their programs. About a quarter signified that their costs would be over $201 but not exceed $300. Approximately one sixth of the sample expected to spend $100 or less.

Anticipated expenditures for room and board tended to polarize with 41.6 per cent expecting to spend $100 or less and 39.3 per cent $601 or more.

Although there was a tendency for the expenses students expected for clothing and incidentals to vary considerably, a majority (54.0 per cent) expected to spend more than $100 but not more than $300.

During their first year at NAIT 40.5 per cent of the students expected to spend $100 or less on travel and car expenses. A further 27.5 per cent expected to spend between $100 and $200.

Of the 136 students shown in Table 38 to have anticipated expenditures between $0 and $100 for "other" specified costs, 128 registered $0 expected expenditures. By far the largest category of specified expenses was entertainment, with 34 respondents indicating expected expenditures ranging over the full scale. Only two respondents in the all-female Vocational Department programs specified expenses in this category. The second and third largest specified expense categories were medical-dental and debt repayment. Five respondents specified expenditures ranging from less than $100 to $400 in the former category and four respondents specified expenses ranging from $201 to $601 or more in the latter. Babysitting expenses ranged from $501 to $601 or more for two respondents.

Sources of Funds While at NAIT

Student responses with respect to the way in which they were financing their expenses during their year at NAIT are shown in Table 39 for the total sample. Eight sources were identified for students; the ninth source was left blank for the student to specify "other" source(s) of funding.

Jobs held during the previous summer or full- and part-time jobs were a major source of funds for the students surveyed. Of the three, summer jobs provided the most funds for the most students. Almost a third of the total sample identified that their summer employment would provide between $101 and $500. A further 11.8 per cent indicated that this source would provide $1,100 or more.

Many students appear to have found it necessary to work either part- or full-time to finance their educational and living expenses. Over two-fifths of the sample reported that they had part-time jobs and a further 22.5 per cent indicated that they were working full time while attending the Institute.

Almost half of the students drew upon their personal savings in order to cover their expenses. While the majority (64.8 per cent) of these reported that they would use from less than $100 to $500 of their savings, 5.6 per cent stated that they would use $1,100 or more.

Government loans or grants, together with scholarships or bursaries, were also sources of funds. Over three quarters (76.6 per cent) of the 47 students who reported receiving funds from the latter source received less than $100. The majority of the students (54.1 per cent) reporting government support indicated that they would receive over

Table 39

Distribution of Student Responses by Sources of Funds

	Less than $100		$101-$300		$301-$500		$501-$700		$701-$900		$901-$1,100		$1,101 or more		Totals	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Summer job	25	14.0	36	20.2	23	12.9	9	5.1	11	6.2	7	3.9	21	11.8	132	74.2
*Part-time job	33	18.5	16	9.0	10	5.6	6	3.4	3	1.7	4	2.2	9	5.1	81	45.5
*Full-time job	34	19.1	2	1.1	0	0.0	0	0.0	0	0.0	1	0.6	3	1.7	40	22.5
Personal savings	37	20.8	13	7.3	17	9.6	9	5.1	2	1.1	0	0.0	10	5.6	88	49.4
Government loans or Grants	20	11.2	1	0.6	10	5.6	9	5.1	9	5.1	15	8.4	21	11.8	85	47.8
Scholarships or Bursaries	36	20.2	4	2.2	1	0.6	0	0.0	0	0.0	3	1.7	3	1.7	47	26.4
Parents	29	16.3	27	15.2	19	10.7	9	5.1	7	3.9	2	1.1	13	7.3	106	59.6
Wife or Husband	22	12.4	2	1.1	2	1.1	0	0.0	0	0.0	4	2.2	8	4.5	38	21.3
Other	1	0.6	4	2.2	3	1.7	2	1.1	1	0.6	1	0.6	2	1.1	14	7.9

n = 178

*while at NAIT

$901.

Next in frequency to jobs held during the previous summer, parents were cited by students as the most frequent source of funds. Parents supplied sums ranging from $100 or less for 29 students (16.3 per cent) to $1,100 or more for thirteen students. Family support from husbands and wives was also received by 21.3 per cent of the students. This support tended to polarize with 12.4 per cent reporting less than $100 and 6.7 per cent over $900.

Respondents were asked to specify other sources of funds. Fourteen students answered this item. Of the sources named, an inheritance, a cattle sale, insurance benefits and a veterans allowance were the largest.

Amount of Financial Help Requiring Repayment

Respondents were asked to indicate whether they received financial assistance to attend NAIT. Approximately two-fifths of the students had not received help. A further 9.6 per cent replied that they did not have to repay the assistance received.

Table 40 shows the distribution of student responses in terms of the amount of financial assistance requiring repayment accumulated during respondents' first year. Of those in debt, a majority (51.8 per cent) indicated that they would have to repay $1,001 to $2,000, and 14.5 per cent amounts in excess of $2,000.

Parents' Combined Annual Income

Almost half of the Business Department respondents who answered this item reported that their parents combined annual income was over $10,001. By comparison, only 37.1 per cent of the

Table 40

Distribution of Student Responses by Amount of Financial Assistance Requiring Repayment

		No Help Rec'd or Repayment Note Required		Amount of Financial Help Requiring Repayment					
				$1—1000		$1001—2000		Over $2000	
	n	f	%	f	%	f	%	f	%
BUSINESS DEPARTMENT									
Accounting & Finance	25	13	52.0	1	4.0	8	32.0	3	12.0
Administrative Management	26	17	65.4	3	11.5	4	15.4	2	7.7
Marketing Administration	29	15	50.0	7	23.3	4	13.4	3	10.0
Computer Systems Technology	27	11	40.7	9	33.3	6	22.2	3	10.0
Subsample Totals	107	56	52.3	20	18.7	22	20.6	9	8.4
VOCATIONAL DEPARTMENT									
Dietary Technician	27	13	44.8	4	13.7	8	27.6	2	6.9
Medical Record Librarian	15	9	60.0	2	13.3	3	20.0	1	6.7
Secretarial Technology	26	14	53.9	2	7.6	10	38.4	0	0.0
Subsample Totals	68	36	52.9	8	11.8	21	30.9	3	4.4
TOTAL SAMPLE	175	92	51.7	28	15.8	43	24.1	12	6.8

parents of Vocational Department respondents attained this level of combined income.

At the lower end of the income scale, 10.8 per cent of the Business and 14.1 per cent of the Vocational respondents' parents had combined incomes of $6,000 or less. A further 6.9 per cent of the former group and 5.6 per cent of the latter group indicated that their parents were either deceased or retired (Table 41).

CHAPTER SUMMARY

The sample described in this study consisted of 178 students enrolled in their first year of two-year business and vocational programs at NAIT. In this chapter the students were described according to the following variables: sex, age, marital status, student high school and work background, student aspirations and objectives, factors of importance to students when considering attendance at the Institute, and socioeconomic status.

Table 41

Distribution of Student Responses by Parents' Combined Annual Income

	n	Deceased or Retired f	Deceased or Retired %	Less than $4000 f	Less than $4000 %	$4001—6000 f	$4001—6000 %	$6001—8000 f	$6001—8000 %	$8000—10,000 f	$8000—10,000 %	$10,000—15,000 f	$10,000—15,000 %	$15,000 or More f	$15,000 or More %
BUSINESS DEPARTMENT															
Accounting & Finance	24	1	4.0	0	0.0	1	4.0	4	16.0	2	8.0	9	36.0	7	28.0
Administrative Management	25	2	7.7	1	3.8	3	11.5	6	23.1	4	15.4	3	11.5	6	23.0
Marketing Administration	27	1	3.3	2	6.7	1	3.3	3	10.0	4	13.3	10	33.3	6	20.0
Computer Systems Technology	26	3	11.1	1	3.7	2	7.4	3	11.1	8	29.6	4	14.8	5	18.5
Subsample Totals	102	7	6.9	4	3.9	7	6.9	16	15.7	18	17.6	26	25.5	24	23.5
VOCATIONAL DEPARTMENT															
Dietary Technician	20	1	3.4	0	0.0	5	17.2	3	10.3	6	20.7	3	10.3	2	6.8
Medical Record Librarian	11	1	6.7	0	0.0	2	13.3	0	0.0	4	26.7	2	13.3	2	13.4
Secretarial Technology	18	1	3.8	4	15.4	3	11.5	3	11.5	0	0.0	5	19.2	2	7.6
Subsample Totals	49	3	6.1	4	8.2	10	20.4	6	12.2	10	20.4	10	20.4	6	12.2
TOTAL SAMPLE	151	10	5.6	8	4.5	17	9.6	22	12.4	28	15.7	36	20.2	30	16.9

Chapter 5

STUDENT CHARACTERISTICS AND ACADEMIC SUCCESS

This chapter presents analyses of the data performed to determine if any significant relationship existed between a number of independent student characteristics variables and student level of success. It also presents the results of the stepwise multiple regression analysis employed to determine the best predictor and combination of predictors of third quarter, student grade-point averages. The chapter is divided on the basis of the statistical procedure employed to analyze the data.

CHI SQUARE

The chi square procedure was used to determine any significant association between the independent variables sex, age, marital status, degree of parental influence on attendance, post-graduation plans, mother's occupation and student level of success. The results of the analyses are shown in Table 42.

As shown in Table 42 a significant chi square of 12.294 was found for the total sample with respect to the independent variable sex. This finding indicated that a significant association existed between a student's sex and his/her level of success. Specifically this analysis appeared to support a visual inspection of the data which indicated that for the total sample the number of females in the high grade-point average range was disproportionately high, and the number

Table 42

Chi Square Analysis of Categorical Student Characteristic Variables

and Student Grade-Point Averages

Independent Variable	Group	Chi Square	Degrees of Freedom	Probability
Sex	- Business Department	2.050	2	0.359
	Total Sample	12.294	2	0.002**
Age	- Business Department	10.016	12	0.562
	Vocational Department	12.871	12	0.379
	Total Sample	9.295	12	0.678
Marital Status	- Business Department	10.463	4	0.033*
	Vocational Department	4.037	4	0.401
	Total Sample	12.137	4	0.016*
Post-Graduation Plans	- Business Department	16.500	10	0.086
	Vocational Department	11.537	10	0.317
	Total Sample	11.931	10	0.290
Mother's Occupation	- Business Department	3.856	4	0.426
	Vocational Department	3.625	4	0.459
	Total Sample	5.970	4	0.201
Parental Influence on Attendance	- Business Department	10.622	6	0.101
	Vocational Department	2.412	6	0.878
	Total Sample	8.343	6	0.214

*Significant at the .05 level
**Significant at the .01 level

in the low grade-point average range was disproportionately low.

The chi square procedure was not appropriate for use with the all-female Vocational Department subsample with respect to the independent variable sex. The chi square for the Business Department subsample was not found to be significant.

These findings with respect to the significant relationship between sex and academic success found for the total sample but not for the coeducational Business-programs subsample suggested a number of questions that may deserve further study: Are higher course marks in all-female Vocational Department programs than in coeducational Business Department programs? Do female students enrolled in Business Department programs demonstrate lower levels of achievement than their counterparts in Vocational Department programs? A lack of significant relationship was found between age, post graduation plans, mother's occupation and degree of parental influence on attendance.

With respect to the independent variable marital status, a chi-square of 12.135 was found for the total sample. This indicated that the relationship between respondents' level of success and their marital status was significant at the .05 level for the total sample. A significant relationship at the .05 level between marital status and level of success was also found for the Business Department subsample. Application of the chi square procedure resulted in the lack of significant relationship for the Vocational subsample.

However, these findings were questionable given the empty cells in the "divorced, separated, widowed" column.

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT

The Pearson product-moment correlation coefficient was computed to determine whether a significant relationship existed between students' value orientations and students' grade point averages at the conclusion of their third quarter. For purposes of this analysis a traditional and emergent value orientation score for each respondent was obtained.

The correlation coefficients obtained between the traditional and emergent value orientation scores and the final grade-point averages are presented in Table 43. As shown in the table the coefficients obtained for the correlation between the value orientation measures and students' final grade-point averages were not statistically significant. This analysis suggests that there was little relationship between the value orientations indicated by the modified Differential Values Inventory and student success as indicated by students' grade-point averages at the end of their first year at the Institute.

Pearson product-moment correlations were also computed to examine the relationship between student traditional and emergent value orientations. This analysis produced a positive coefficient of .819 which was statistically significant at the .001 level. This indicates that a direct relationship exists between student traditional and emergent value orientations so that the higher the degree of student orientation toward traditional values, the higher their orientation to emergent values. This finding suggested that the Inventory, adapted by Friesen in 1970, did not differentiate between

Table 43

Pearson Correlation Coefficients between Students' Value Orientations and Students' Grade-Point Averages

Students' Value Orientations	Students' Grade-Point Averages r	p
Tradition Orientation	.010	0.894
Emergent Orientation	.056	0.460

students in terms of their value orientations. A further revision of the Inventory may be indicated to obtain significant levels of value orientation differentiation.

ONE-WAY ANALYSIS OF VARIANCE

A comparison of the mean student scores obtained via the Differential Values Inventory was made with subsamples partitioned on the basis of high, middle or low third-quarter grade-point averages.

The data obtained in the one-way analysis of variance of the traditional value orientation scores when students were grouped according to their level of academic success. Inspection of these data indicated that no significant differences in traditional value orientations existed when students were so grouped.

In Tables 44 and 45 data obtained from the one-way analysis of variance of the emergent value orientation scores when students were grouped according to their level of academic success are shown. An inspection of these data also indicated that no significant differences in emergent value orientations existed when students were so grouped.

These findings may suggest that students' value orientations have little affect on level of academic success. On the other hand the instrument used may not have differentiated between students in terms of their value orientations or the findings may have supported the hypothesis that students enrolled in the programs studied were relatively homogenous with respect to their value orientations.

Table 44

Student Emergent Value Orientations Compared on the Basis of Level of Academic Success

Level of Academic Success	n	Mean*	Standard Deviation	F Ratio	Probability
High	55	30.69	6.492	1.53	0.22
Middle	65	29.00	5.093		
Low	58	29.22	5.302		
TOTAL	178	29.50	5.626		

*The lower the mean score, the greater the emergent value orientation.

Table 45

Student Traditional Value Orientations Compared on the Basis of Level of Academic Success

Level of Academic Success	n	Mean*	Standard Deviation	F Ratio	Probability
High	55	43.29	8.741	0.44	0.65
Middle	65	42.09	7.299		
Low	58	42.19	8.741		
TOTAL	178	42.49	7.568		

*The lower the mean score, the greater the traditional value orientation.

STEPWISE MULTIPLE REGRESSION ANALYSIS

Stepwise multiple regression analyses were used to determine the best predictor and/or combination of predictors of student success as indicated by the level of student grade-point averages at the end of their first year at the Institute. Portions of these analyses are presented for the total sample and also for the Business and Vocational Department subsamples. Table 46 lists the variables that were included in the stepwise multiple regression analyses. The categorical variables sex, age, marital status, degree of parental influence on attendance, post-graduation plans and mother's occupation were excluded from these analyses.

Correlations between Student Characteristics Variables and Student Academic Achievement

Intercorrelation tables, produced as part of the stepwise multiple regression analyses, showed the relationships between the predictor and the criterion variable: (grade-point average). Table 46 indicated that the correlations between the forty-five student-characteristics variables and the grade-point-average criterion variable were relatively low. No correlation coefficient was greater than 0.311 in the Business Department subsample, 0.405 in the Vocational Department subsample, and 0.271 in the total sample.

Two of the highest three correlations for the Business Department subsample and the total sample were the importance placed by students on good grades and completion of their programs. These ranked first and second, respectively, for the Business Department

Table 46

Correlations Between Student Characteristics Predictor Variables and the Grade-Point Average Criterion Variable

Predictor Variables	Correlation Coefficient with Grade-Point Average		
	Business Department	Vocational Department	Total Sample
High School and Work Background			
V1 school size	-0.148	-0.018	-0.144
V2 role satisfaction	0.132	0.145	0.006
V3 extra-curricular activity	0.086	0.033	0.039
V4 peer friendliness	0.041	-0.014	-0.040
V5 used counselling	0.095	-0.053	0.052
V6 program	-0.121	-0.221	-0.153
V7 qualifications	-0.118	-0.405	-0.200
V8 work period	0.108	0.042	0.010
Important Attendance Considerations			
V9 teaching repute	-0.109	0.089	-0.061
V10 atmosphere	0.002	0.244	0.002
V11 cost	-0.123	0.013	-0.088
V12 athletic program	0.122	0.327	0.120
V13 employment	0.044	0.158	0.041
V14 proximity	-0.091	0.077	-0.029
V15 friend attending	0.012	0.112	0.019
V16 placement record	-0.086	-0.038	-0.058
V17 family advice	-0.094	-0.118	-0.145
V18 uniqueness	0.081	-0.147	-0.042
V19 specified factors	-0.075	0.030	-0.089

Table 46 (continued)

Predictor Variables	Correlation Coefficient with Grade-Point Average		
	Business Department	Vocational Department	Total Sample
Aspirations and Objectives			
V20 time of decision	0.135	0.202	0.077
V21 grades important	-0.311	-0.070	-0.271
V22 completion important	-0.195	-0.079	-0.196
V23 earning expectations	0.145	0.169	-0.151
Socioeconomic			
V24 size - home community	-0.137	0.145	-0.093
V25 father's status	-0.010	0.131	0.083
V26 father's education	-0.069	-0.130	-0.103
V27 mother's education	-0.026	0.166	0.068
V28 brothers/sisters	-0.055	-0.047	-0.070
V29 tuition and supplies	0.106	-0.291	0.010
V30 room and board	0.074	-0.018	0.025
V31 clothing	0.051	-0.228	-0.061
V32 travel and car	0.060	-0.091	-0.098
V33 specified items	0.075	-0.207	-0.074
V34 funds - previous job	0.052	0.033	-0.061
V35 funds - part-time job	0.086	0.061	-0.024
V36 funds - full-time job	-0.060	0.054	-0.031
V37 funds - savings	-0.021	-0.123	-0.082
V38 funds - loans/grants	0.069	-0.130	-0.004
V39 funds - scholarships	-0.122	0.138	0.003
V40 funds - parents	-0.026	-0.067	-0.040
V41 funds - wife/husband	0.101	0.133	0.051
V42 funds - specified	0.036	-0.119	0.001
V43 debt repayment	-0.071	-0.127	-0.080

Table 46 (continued)

Predictor Variables	Correlation Coefficient with Grade-Point Average		
	Business Department	Vocational Department	Total Sample
Values			
V44 traditional	-0.029	0.025	0.010
V45 emergent	-0.026	0.144	0.056

and first and third, respectively, for the total sample. For the Vocational subsample high school qualifications and the degree of importance placed on the athletic program at NAIT were ranked as first and second highest correlations.

In the light of the review of literature, low correlations between the nonintellective variables and students' grade-point averages were to be expected. High school program and qualifications, the two intellective-based variables, ranked eleventh and twelfth, respectively, for the business subsample, sixth and first for the vocational subsample, and fourth and second for the total sample.

Total Sample Stepwise Regression Analysis

Table 47 showed the first ten predictor variables which entered the regression equation when data for the total sample were analyzed. All variables with the exception of "high school qualifications" were nonintellective and the first, second, third and eighth variables which entered the equation were significant at the .05 level. In order of entrance into the equation, these were the degree of importance placed on good Institute grades, high school qualifications, and the importance placed on the athletic program and the students residence prior to attendance at the Institute. The first three of these variables accounted for 12.26 per cent of the variance in third quarter grade-point averages. Together with the remaining seven of the first ten variables entering the equation it was possible to account for 20.89 per cent of the variance in these grade averages. After the entry

Table 47

Stepwise Multiple Regression Analysis of the Total Sample

The First Ten Predictor Variables of the Criterion Variable: Third Quarter, Grade-Point Averages

Predictor Variables in Order of Their Entry into the Equation	F	P	Cumulative % of Variance	Standard Weights on Entry
V21 Grades important	13.98	0.00	7.36	-0.271
V7 Qualifications	5.98	0.02	10.42	-0.176
V12 Attendance - athletic program	3.65	0.05	12.26	0.136
V22 Completion important	2.55	0.11	12.58	-0.127
V23 Earning expectations	2.90	0.09	14.97	-0.124
V20 Time of decision	1.82	0.17	15.86	0.101
V43 Debt repayment	2.19	0.14	16.93	-0.104
V24 Size - home community	3.85	0.05	18.78	-0.155
V38 Funds - loans/grants	2.56	0.11	20.00	-0.198
V19 Attendance - specified factors	1.88	0.17	20.89	-0.098

$n = 178$

After entry of the tenth variable $R^2 = .209$ $R = \sqrt{.209}$

After entry of the forty-fifth variable $R^2 = .274$ $R = \sqrt{.274}$

of the forty-fifth variable 27.4 per cent of the variance was accounted for.

All four of the student aspirations and objectives variables were among the first six predictor variables entering the equation. Specifically, these variables ranked first, fourth, fifth and sixth in entering the equation. If the student also had obtained university entrance academic qualifications and had little interest in athletics his/her likelihood of academic success would be enhanced (Table 47). These findings suggested that a hypothetical student who delayed the decision to enroll in one of the programs examined by this study after obtaining university entrance qualifications, and who aspired to complete his/her program with good grades with a view to earning a realistic income and who was distinterested in athletics would be more likely to be academically successful than a student who did not possess these qualifications.

The seventh, eighth and ninth variables to enter the equation were socioeconomic variables. These appeared to indicate a students' academic success would be further aided if he/she accumulated a low level of debt during the first year of school, resided in a rural or smaller urban community prior to enrolling and required only a modest amount of government assistance. The last of the first ten items which entered the equation concerned a specified factor of importance when a student was considering attending the Institute. This may have suggested that a student who had a specific reason for enrolling in the programs studied would be more likely to be academically successful.

Business Department Subsample Stepwise Multiple Regression Analysis

The first ten variables entering the regression equation when the data obtained from Business Department students were analyzed was shown in Table 48. Of these factors only "high school program" was of an intellective nature and only the first two which entered the equation were significant at the .05 level. In order of their entrance into the equation, these were the degree of importance placed on good grades and the level of post-graduation income expected.

These two variables accounted for 13.27 per cent of the variance in Business Department respondents' third quarter grade-point averages. The first ten factors entering the equation, as specified in Table 48, accounted for 28.73 per cent of the variance in these grade-point averages. After the entry of the forty-fifth predictor variable 42.6 per cent of the variance was accounted for.

These results suggested that well-defined aspirations as well as high school background were important to the academic success of students enrolled in Business Department programs. Specifically, in order of entry into the equation, students who placed importance on good grades, anticipated a high level of post-graduation income, were only moderately active in high school extra-curricular activities, attended a smaller high school, and made good use of high school counselling services would be more likely to be academically successful. Of the remaining four predictor variables in the first ten entering the equation, a lack of importance attributed to the program being offered at the Institute, a modest amount of financing

Table 48

Stepwise Multiple Regression Analysis of the Business Department Subsample

The First Ten Predictor Variables of the Criterion Variable:

Third Quarter, Grade-Point Averages

Predictor Variables in Order of Their Entry into the Equation		F	P	Cumulative % of Variance	Standard Weights on Entry
V21	Grades important	11.32	0.001	9.65	-0.311
V23	Earning expectations	4.38	0.04	13.27	0.192
V3	Extra-curricular activity	2.91	0.09	15.63	0.156
V1	High school size	2.50	0.18	17.63	-0.148
V6	High school program	3.66	0.06	20.48	-0.178
V5	Used counselling	2.44	0.12	22.36	0.141
V18	Attendance - uniqueness	2.42	0.12	24.19	0.141
V42	Funds - specified	1.88	0.17	25.60	0.121
V29	Expenditures - tuition, fees	2.29	0.13	27.30	0.139
V14	Attendance - proximity	1.94	0.17	28.73	0.141

$n = 108$
After entry of the tenth variable $R^2 = .287$ $R = \sqrt{.287}$
After entry of the forty-fifth variable $R^2 = .426$ $R = \sqrt{.426}$

from a specified source, a relatively high expenditure on tuition, fees and supplies, and importance placed on the Institute being close to home contributed to the variance in third quarter grade-point averages. All of the first ten variables entering the regression equation were nonintellective variables with the exception of "high school program."

The strength of the predictor variable "good grades important" is evidenced by its ranking (i.e. first entry) and Beta weights as shown in Table 48. The prominence of student aspirations and objectives and high school background predictor variables may suggest that these should be given consideration by Business Department administrators, instructors and counsellors when making decisions relative to students in the programs studied.

Vocational Department Subsample Stepwise Multiple Regression Analysis

As shown in Table 49 the first four variables of the ten shown entering the regression equation were found to be significant at the .05 level. In order of entrance into the equation these were high school qualifications, the degree of importance placed on the athletic program when deciding to attend the Institute, the amount of money the respondent expected to spend on clothing and incidentals, and on tuition, fees and supplies. These four variables accounted for 36.09 per cent of the all-female Vocational respondents' third quarter grade-point averages. Together with the remaining six factors listed in Table 49 they accounted for 48.58 per cent of the variance in these averages. Of the ten variables all but "high school qualifications" were nonintellective independent variables.

Table 49

Stepwise Multiple Regression Analysis of the Vocational Department Subsample

The First Ten Predictor Variables of the Criterion Variable:

Third Quarter, Grade-Point Averages

Predictor Variables in Order of Their Entry into the Equation		F	P	Cumulative % of Variance	Standard Weights on Entry
V7	High school qualifications	13.34	0.001	16.40	-0.405
V12	Attendance - athletic program	7.30	0.01	24.61	0.288
V31	Expenditures - clothing, misc.	5.70	0.02	30.60	-0.245
V29	Expenditures - tuition, fees	5.59	0.02	36.09	-0.243
V33	Expenditures - specified	1.67	0.20	37.72	-0.132
V27	Mother's educational level	1.84	0.18	39.49	0.139
V26	Father's educational level	3.17	0.08	42.43	-0.231
V28	Number brothers/sisters	3.35	0.07	45.42	0.198
V15	Attendance - friend attending	1.93	0.17	47.12	0.132
V36	Funds - full-time job	1.68	0.20	48.58	-0.127

$n = 70$

After entry of the tenth variable $R^2 = .486$ $R = \sqrt{.486}$

After entry of the forty-fifth variable $R^2 = .664$ $R = \sqrt{.664}$

After the entry of the forty-fifth predictor variable 48.58 per cent of the variance in the grade-point averages had been accounted for. This percentage was substantially higher than those for the total sample or the Business Department subsample. The homogeneous nature of the all-female Vocational Department subsample may have contributed to this finding.

In contrast to the total sample and Business Department subsample, socioeconomic predictor variables contributed most to the variance in third quarter grade-point averages for the Vocational Department subsample. Seven of the first ten predictor variables entering the equation were relative to socioeconomic student characteristics. The top-ranking predictor variable for both the total sample and the Business subsample, the importance placed on receiving good grades, did not enter the regression equation until the twenty-seventh step for the Vocational Department subsample.

The findings would appear to suggest that an academically successful Vocational Department student would have all or many of the following characteristics: senior matriculation with university entrance; a high degree of interest in the athletic program when considering Institute attendance; a tendency to expect relatively low expenditures for clothing and incidentals, tuition, fees, supplies, and specified expenditures; mothers possessing a relatively high level of education and fathers possessing a relatively low level of schooling; relatively few brothers and sisters; a friend attending the Institute; and be a recipient of an income from a full-time job while attending classes.

An examination of the frequency distributions for these variables revealed disproportionate number of students in Vocational programs possessing senior or general matriculation qualifications. Over 93 per cent of the students in the Medical Records Librarian program possessed this level of academic qualification prior to attending NAIT. Reliance on the findings relative to the stepwise multiple regression analysis of Vocational Department data should await further studies involving larger and more stable samples.

CHAPTER SUMMARY

This chapter has presented analyses of the data with a view to examining the relationship between measures of student academic success and student characteristic variables. Chi square, Pearson product-moment correlation coefficient, one-way analysis of variance and stepwise multiple regression treatments were employed to this end.

The chi square test indicated that the categorical independent variables sex and marital status were significantly associated with student level of academic success for the total sample. Marital status was also found to be significantly related for the Business subsample.

Computation of the Pearson product-moment correlation coefficients between student traditional and emergent value orientations and level of academic success indicated that no significant relationship existed among these variables. The one-way analysis of variance test also indicated that no significant differences in either traditional or emergent value orientations existed when students were grouped on the basis of their level of academic success.

Stepwise multiple regression analysis of the total sample and the Business Department subsample data indicated that the degree of importance placed on achieving "good Institute grades" was the best predictor of academic performance accounting for 7.36 per cent and 9.65 per cent, respectively, of the variance in student third quarter grade-point averages. Of the remaining student characteristics predictor variables, for these two groupings those associated with student high school background and aspirations and objectives were well represented in the first ten variables entering the multiple regression equation. The "high school qualifications" variable entered the regression equation first for the Vocational Department subsample. Socioeconomic factors were well represented in the first ten predictors entering this equation. A concern was expressed for the reliability of the findings of the stepwise multiple regression analysis of Vocational Department data due to the size and composition of this subsample.

Chapter 6

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER STUDY

SUMMARY

The Problems

The purposes of this study were twofold. First, to collect data relevant to the demographic, high school and work background, goal definition and objectives and socioeconomic status of students enrolled in their first year of two-year Business and Vocational Department programs offered by the Northern Alberta Institute of Technology. The second purpose was to determine the significance of these characteristics and/or student value orientations to student academic success. The study focused on non-intellective student characteristics. With two exceptions (high school program and level of high school qualification) all data collected were relevant to non-intellective rather than intellective student characteristics.

Related Literature

A review of literature related to the study suggested that relatively little empirical research had focused on the characteristics of students attending Canadian or United States two-year educational institutions. Few studies which gathered data with respect to the non-intellective characteristics of students in four-year colleges and universities found these to be strong predictors of student academic success.

The review of literature revealed the need for studies of the characteristics of students attending two-year post-secondary, non-university educational institutions and the importance of the baseline data produced for the decisions of instructors, counsellors and administrators.

Methodology

The sample for this study was drawn randomly from students enrolled in the seven, two-year business and vocational programs offered by the Northern Alberta Institute of Technology. Data were obtained from one hundred seventy-eight students during the third and last quarter of their first year of enrolment by means of a three-part questionnaire. The usable response rate for the sample was 78.8% of the questionnaires distributed.

Information received on questionnaires was subsequently analyzed using the following computer programs:

NONP10 - frequency and percentage analysis

DEST02 - Pearson product-moment correlation coefficients

ANOV15 - F test

NONP10 - chi square analysis

MULR06 - stepwise multiple regression analysis

Findings with a probability level less than or equal to .05 were accepted as being "significant."

Findings

Demographic factors. The analysis of the sample revealed that approximately four-fifths of the students enrolled in business programs were male while all respondents in vocational programs were female. Almost half of the students were nineteen years of age or under; almost nine-tenths were twenty-two or under. Only 10.7 per cent were married, with an additional 2.3 per cent either divorced or separated.

Student High School Background and Work Experience. Almost half (46.1 per cent) of the students surveyed had attended large secondary schools and a substantial majority had liked being high school students. Approximately three quarters of the total sample also indicated that they had been "moderately" or "not active" in extra-curricular activities. A majority of the students found their high school peers to be "quite friendly." Although a relatively high proportion of the respondents made use of high school counselling services, nine per cent indicated that such services were not available.

A high percentage (60.2 per cent) of the sample had been enrolled in academic high school programs leading to university entrance. Given this orientation, it was not surprising to find that over two-fifths possessed university entrance qualifications. Only a small percentage of the students (4 per cent) were lacking either a diploma or university entrance qualifications.

A majority of the students either did not work after leaving high school or worked for six months or less. However, more than two-fifths had worked in excess of seven months and over a quarter of these worked for more than one year before attending the Institute.

Student aspirations and objectives. Analysis of responses to survey items designed to obtain information with respect to student goal definition and objectives revealed that while approximately half of the respondents made the decision to attend the Institute while attending high school, almost a third made this decision after working six months or more.

Over half the students surveyed reported that they and their families were mutually agreed on the importance of their attendance at the Institute. A sixth of the students indicated that their attendance was more important to them than to their parents. Less than ten per cent responded that their family was more eager for them to attend than they were.

A high percentage (70.8 per cent) of students signified that it was "very important" for them to complete their programs. The attainment of good grades was of somewhat less importance with approximately two-fifths of the students responding "very important" and a group of similar size responding "quite important."

The importance placed by students on specified variables when considering attendance at NAIT was solicited on the assumption that the responses would indicate whether respondents had definite goals in mind when they made their decision to attend the Institute. Answers to this series of items indicated that "NAIT graduates get jobs" was the most important variable followed by "low cost," "friendly atmosphere" and "teaching reputation."

The earning expectation of students was surveyed to determine income goals following graduation. Over a third of the Business Department students expected to attain an annual income level of

$25,000. Over three quarters of the female respondents in vocational programs expected to attain less than $9,000 annually.

Student socioeconomic status. Ten items were included in the questionnaire to assess students' socioeconomic status. The analysis of the responses to the first of these items revealed more than half of the students resided in communities with populations exceeding 50,000 for the majority of the three years preceding their attendance at NAIT. The remainder were almost equally divided between those from municipalities with populations from 10,000 to 50,000 and those from rural communities.

The analysis of items concerning fathers' socioeconomic status on the basis of Hollingshead's Two Factor Index of Social Position placed over three quarters of the fathers of respondents in the third and fourth quintiles. The next largest percentage (9 per cent) fell into the fifth, and lowest, quintile.

Almost half of the students' fathers had no high school or "some high school." However, approximately a third of the fathers had received some post-secondary training or education. Only a small percentage (5.6 per cent) had completed university. Fewer mothers than fathers of students were shown to have no high school and more of the mothers had completed high school. On the other hand fewer mothers (2.2 per cent) had completed university.

Although the average number of brothers and sisters of respondents was three, over a third specified that they had come from families with more than six children.

The expected expenditures of students varied widely. A hypothetical married student with two pre-school children, paying for room and board, travel, and dental expenses might expect expenses to total in excess of $3,000. On the other hand a single student living at home might anticipate expenses of approximately $400. Expenses for single students living away from home might be expected to total $1,500.

To cover their expenses respondents indicated widely diversified sources of funds. The two main sources of financing were jobs during the previous summer and parents. Approximately three quarters of the students cited the former, and approximately three fifths the latter as their chief source of income. These sources accounted for an average of $266 and $220, respectively. Other major sources of funds in order of importance were personal savings, government loans or grants, and part-time jobs while attending NAIT.

Over half of the students surveyed disclosed that they would be required to repay less than $100 of the financial assistance they had received during the first year of the programs. Approximately a fifth indicated that their indebtedness would lie between $401 and $1,000. Only six students (3.4 per cent) indicated that they would have to repay over $2,000.

Almost half of the students in Business Department programs and approximately a third of those enrolled in Vocational Department programs reported that their parents' combined annual income exceeded $10,000. At the lower end of the income scale, almost one third of the Vocational respondents disclosed that their parents' incomes were $8,000 or less.

Analyses of the Data

Chi square analysis of categorical questionnaire items found a significant relationship at the .01 level between students' sex and level of academic success for the total sample. However, this relationship did not persist when the test was applied to the Business subsample. A significant relationship at the .05 level was found between students' marital status and level of success for the total sample. This relationship persisted for the Business subsample but not for the Vocational group. No significant relationship was found between the other categorical variables (family influence on attendance, post graduate plans, mother's occupation and age) and student level of academic success.

The computation of Pearson product-moment correlations to determine whether a significant relationship existed between student emergent and traditional value orientations and student final grade-point averages revealed that the association was not statistically significant.

One-way analysis of variance of traditional and emergent value orientation scores, when students were grouped according to their level of academic success, indicated that no significant differences in value orientation existed when students were grouped in this way.

Correlations between student characteristics and student weighted grade-point averages were found to be low. Highest correlations were -0.311 (importance of grades) for the business subsample, -0.405 (high school qualifications) for the vocational subsample, and -0.271 (importance of grades) for the total sample.

Stepwise multiple regression analysis of the total sample indicated that the best predictors of academic performance tended to be those associated with student aspirations and high school background. The first ten variables entering the regression equation accounted for 20.89 per cent of the variance in student third quarter grade-point averages. Analyses of the Business Department subsample also revealed high school background and student aspiration variables to be the best predictors of student performance. The first ten factors entering the equation for this subsample accounted for 28.73 per cent of the variance in final grades. Socioeconomic factors accounted for seven of the first ten variables entering the regression equation in the analysis of the Vocational Department subsample. However, the first variable which entered the equation was high school qualifications. The first ten variables accounted for 48.58 per cent of the variance in vocational students' final grades.

CONCLUSIONS AND IMPLICATIONS

One of the purposes of this study was the collection of data relevant to the characteristics of students enrolled in the first year of two-year Business and Vocational Department programs at NAIT. It was held that such baseline data could provide valuable information for administrator, counsellor and instructor decisions.

Two findings of the study related to demographic characteristics of the sample may have implications for Institute administrators. The relatively small female enrollment in Business Department programs may indicate that insufficient effort has been made by high school counsellors and/or Institute counsellors to inform female students of the occupation and wage opportunities which exist for graduates from two-year business programs. The small number of students over twenty-two in the programs studied may suggest that more effort should be directed to the recruitment of more mature students when promoting Institute Business and Vocational Department programs.

High school background characteristics of substantial groups of students in the Departments studied would seem to point to the need for instructional, administrative and/or counselling action. Many Institute students were found to come from secondary schools which lacked counselling services, to have been inactive in extracurricular activities, and to have found their high school environment and their role as students only moderately satisfying. These findings appear to suggest the need for well-developed counselling and academic-adviser arrangements, as well as instructional and administrative leadership and encouragement of student organizations and activities and the inclusion in the curricula of course units aimed at the development of interpersonal skills.

The finding that a high percentage (96 per cent) of students possessed either university entrance qualifications or diplomas when added to the concomitant finding that a majority were enrolled in high school programs leading to university entrance, favors the conclusion that Institute Business and Vocational programs are being offered to students with academic qualifications similar to those who attend similar but longer university programs. One possible outcome of this is that in many instances Institute Business and Vocational programs do not serve academically disadvantaged students but instead provide a more economical and shorter route to business and vocational occupations. A likely consequence of this high percentage of academically oriented and highly qualified students in some programs may be a tendency toward an academic rather than practical emphasis and an inadequate provision for students entering programs with disadvantaged educational backgrounds. Concomitantly with procedures for the early recognition of such students, Departments should consider the provision of remedial, tutorial and upgrading services for these students.

The findings that over two-fifths of the students worked for an extensive period of time prior to coming to the Institute and made their decision to attend during that time suggests a number of considerations. Advanced placement might be considered for those students who have life experience knowledge and skills relative to their programs. On the other hand, some of these students, returning to school after a lengthy period, will probably require additional counselling and assistance from counsellors and instructors. If it is felt that such students should continue to be recruited for these programs, efforts should continue to be directed to informing them of the suitability of these programs with respect to their vocational objectives.

The respondents who indicated that they were more eager than their families were to have them enroll (approximately one-sixth of the sample), may have been reflecting the relatively low socioeconomic status of their families which made it difficult for their parents to provide needed financial support. These students, together with those who revealed that their parents were more eager for them to attend than they were, might be expected to experience less academic success than their peers and be candidates for early withdrawal due either to financial pressures or to lack of motivation. Procedures should be developed for the early identification of such students so that counsellors and instructors could assist them in obtaining adequate financing or in defining their educational and/or vocational objectives. Provisions have been made by the Departments which permit students to transfer from one program to another. These provisions should be extended where feasible and should be brought to the attention of all students.

Respondents generally revealed an achievement orientation in their answers to questionnaire items dealing with the importance of good grades and program completion. For those students whose grades did not meet their expectations, the importance placed on grades at the Institute may result in dysfunctional frustration and stress which in turn could result in a lowering of performance. Although the questionnaire items did not differentiate between skills and knowledge and grades, student responses may have connoted misdirected goal emphasis. Administrators and instructors should give consideration to placing further emphasis on the importance of learning objectives and to a deemphasis upon grades. Counsellors should assist students to establish learning and vocational goals that are relevant to their individual needs and strengths.

The importance of vocational preparation to students in the two program areas studied is supported by the paramount importance placed on "NAIT graduates get jobs." Practicality was also cited by respondents who specified variables "very important" to them. This vocational orientation may make it difficult for instructors of courses not obviously directly related to job performance to maintain a level of interest requisite to the attainment of course objectives unless a considerable and continuous effort is made to indicate the importance and relevance of these courses to vocational competence and success.

Relatively low tuition fees was cited as the second most important reason for the decision to attend NAIT. The importance of "low cost" is understandable given the other findings of this report regarding family socioeconomic status. Any substantial increase in fees might be expected to decrease enrollment given the socioeconomic status of a large percentage of students' families.

The findings of this study supported those of other research in that the earning expectations of students seemed to be unrealistically high. Business students particularly appeared to have grandiose income expectations. Additional emphasis on current income levels during orientation programs and counselling interviews might produce more realistic expectations and avoid post-graduation student disenchantment while maintaining ambition and enthusiasm for the programs offered.

The socioeconomic status of the parental households of a majority of students (77 per cent) in Business and Vocational Department programs was found to be in the third and fourth social class quintiles. This finding together with those relative to the educational background of students' parents and the number of children in their families suggest that a large number of the students in these programs may come from home environments less than optimally conducive to fostering academic pursuits. It might be hypothesized that such backgrounds could be expected to produce an above average percentage of practical-minded, non-book-oriented, upward mobile students. If this were the case it would have important implications with respect to curriculum development. For example, instructors of courses which are not directly related to students' programs would likely be well advised to use program-oriented examples and exercises wherever and whenever possible. Instructors might also take every opportunity offered to recognize students' performance on assignments and during class discussions.

The expected expenditures for the year reported by students indicated that the estimates made by the Institute in its 1972-1973 Calendar (p. 19) were generally realistic. The one exception was the estimate of approximately $1,000 to $1,200 for students living at home. Based on the findings of this study it could be concluded that $500 to $900 would be a more accurate estimate.

The large items of expenditure specified by some students for medical-dental services, debt repayment and babysitting expenses deserve the special attention of Institute counsellors. Counselling and/or the provision of information with respect to social services available in Edmonton should assist students to sharply reduce these expenses.

The importance of summer employment and full and part-time jobs while at NAIT as a key source in the financing of students' educational expenses was evident from the analysis of the data. This dependency supports the need for continued efforts by governments and other agencies to assist students to obtain summer jobs.

The literature suggests that students who work either full- or part-time during their school year often do so to the detriment of their studies. Instructors should be made aware of the students who are working either full- or part-time during the school year so that realistic assignment loads can be planned and appropriate instructional support provided. The high percentage of students who indicated that they were employed may also argue for the implementation of more adequate support programs via bursaries, grants and loans.

Scholarships and bursaries evidently continue to be a source of funds for a minority of students. With a few notable exceptions this source appeared to provide relatively minor financial support.

Personal savings also constituted an important source of educational financing for many students. It was evident that some students had made a substantial sacrifice in terms of their savings in order to acquire post-secondary education and training.

Given the socioeconomic status of students' parents revealed by this study it was somewhat surprising that less than half of the students reported government loans or grants to be a source of educational funding. In large part this may be explained by the fact that many students were ineligible for substantial government loans because they were living at home and receiving support from their parents. A majority of the students indicated varying degrees of parental financial support.

It might be questioned whether it is equitable to place such a financial burden on parents in these socioeconomic strata, and whether such limitations on government student aid encourage social elitism and contribute to student failure within the post-secondary public educational system.

Another finding of this study, consistent with the number of students working at either full- or part-time jobs, was that over two-fifths of the students had not received financial help. An additional ten per cent did not have to repay the assistance they received.

However approximately a quarter of the students registered debts between $1,000 and $2,000, and twelve students indicated that they would accumulate debts exceeding $2,000 during their first year. Given the moderate earning level potentials of graduates, these findings would also appear to argue with the other socioeconomic findings of this study in favor of increased government support for post-secondary, non-university students.

The importance of high aspirations and well-defined objectives to student academic success was supported by this studies' findings. Counsellors, administrators and instructors can be instrumental in assisting students to formulate and refine their academic goals by clearly stating program and course objectives and by demonstrating the relevance of these objectives to worthwhile vocational and personal objectives. If students clearly understand program and course objectives and believe them to be attainable, this should encourage them to aspire to good grades and program completion.

The findings appear to have supported the use of nonintellective student characteristics in the prediction of student academic performance. Although the intellective variables (high school program and qualifications) proved to be high-ranking predictors of student performance for the total sample and the vocational subsample, with the exception of the vocational group a nonintellective variable or variables ranked higher. Nonintellective variables predominated as predictors of student performance with respect to the Business Department subsample. This may suggest that nonintellective characteristics such as those related to student high school background and aspirations and goals may be important as high school qualifications to student academic performance in business programs.

RECOMMENDATIONS FOR FURTHER STUDY

In addition to the need to replicate the present study to verify its findings, the data gathered could be analyzed to determine the best student characteristic predictors of academic performance for specific programs offered by the Business and Vocational Departments.

Future studies in this area might include more intellective variables and eliminate some of nonintellective variables found by this study to have little relationship to student academic performance. Specifically, high school grades and the results of academic performance tests might be included to determine their relationship to student success in specific programs.

The lack of relationship found by this study between student values and student academic performance may suggest the need for revision of this portion of the instrument in any future study. In the light of the findings of the present study, the value placed on academic achievement by students might be considered for inclusion.

Since it appears that some variables are better predictors of academic performance than others consideration might be given to the use of a differential system of weighting the data in future studies. This nonlinear approach may produce a higher relationship between rank of students on the predictor variables and the rank of students with respect to academic performance at the Institute.

Other methods of analysis of data might be used in future studies. For example, groups of student characteristic variables could be isolated and multiple partial correlations used to study the relationship of each factor with academic performance while the other variables are held constant.

As other researchers have noted (Cohen and Brower, 1970:9) there continues to be a persistent gap between research findings relevant to students and their applications in post-secondary educational institutions. If the findings of this or future studies are to have any significant effect on institutional functioning, it is important that Institute administrators, counsellors and instructors become involved in the research activities. Only in this way can there be a reasonable expectation that research findings with respect to student characteristics will play the role they should in the decision making of these administrators, counsellors and instructors.

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APPENDIX A

Correspondence

Room 815 A
Department of Educational
Administration
University of Alberta
Edmonton, Alberta
March 13, 1972

Mr. V. Harms
Vice-President, Academic
Northern Alberta Institute
of Technology
Edmonton, Alberta

Dear Mr. Harms:

Re: Request for permission to survey students.

Please accept this letter as being written to comply with the policy that all research projects conducted in the Institute must be approved by the Executive Committee.

The thesis proposal and questionnaire attached to this request will supply details of the proposed study. I have discussed my thesis with Mr. North and Dr. Puffer and they have both been supportive in their comments.

If this study meets with approval I would hope to survey the students in the Business and Vocational Division early in April. The questionnaire has been designed so that it may be completed in a very few minutes. Only a small sample (±200 students) will be involved in the survey.

Please convey my appreciation to the members of the Committee for their consideration of this request.

Cordially,

Peter Stewart

APPENDIX B

Questionnaire

STUDENT CHARACTERISTICS QUESTIONNAIRE
NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY
BUSINESS AND VOCATIONAL DIVISION

You have been selected with a number of your fellow students to participate in a survey whose purpose is to obtain personal, social and economic data with respect to the students enrolled in this Division. With the information you provide your program may be modified to better suit you.

While you should be able to answer all the questions, should you find one you do not wish to answer please omit it and move on to the next question.

Your name and your answers will remain completely confidential. You are being asked for your name in this questionnaire so that the information you provide may be combined with other information already in the Institutes's records.

Results of the study will be available in the library after next September.

Thank you for your cooperation.

DIRECTIONS

Most of the questions require a ✓ to be placed in a box next to your choice of answers. Numbers in the right margin and adjacent to the boxes are for computer coding purposes only.

Please Print:

Name ____ 1-3
Last Name Given Names

1. Please check the program in which you are enrolled.

Business Department:			
Accounting and Finance	☐	1	
Administrative Management	☐	2	
Marketing Administration	☐	3	
Computer Systems Technology	☐	4	
Vocational Department:			
Teller Training and General Business	☐	5	
Dietary Technician	☐	6	4
Medical Record Librarian	☐	7	
Medical Typist	☐	8	
Secretarial Technology	☐	9	
Office Machine Technician	☐	01	
Barbering	☐	02	
Beauty Culture	☐	03	
Food Services Department:			5
Commercial Baking	☐	04	
Commercial Cooking	☐	05	
Meat Cutting and Butchering	☐	06	

2. Sex: Male ☐ 1
Female ☐ 2 6

3. What is your marital status?

Single ☐ 1 Married ☐ 4
Divorced ☐ 2 Widowed ☐ 5 7
Separated ☐ 3

PART A

1. What was the approximate number of students in the high school you attended? (If more than one attended, indicate largest number).

Less than 100 ☐ 1
100 - 300 ☐ 2
301 - 500 ☐ 3
501 - 700 ☐ 4 8
701 - 900 ☐ 5
901 1,100 ☐ 6
1,101 and over ☐ 7

2. How well did you like being a high school student in general?

Very much ☐ 1
Quite a bit ☐ 2
Some ☐ 3 9
Not at all ☐ 4

3. How active were you in your high school's extra-curricular activities? (e.g., student council, sports, drama, etc.)

Very active ☐ 1
Quite active ☐ 2
Somewhat active ☐ 3 10
Not active ☐ 4

4. Did you find most of the students friendly at your high school?

Very friendly ☐ 1
Quite friendly ☐ 2
Somewhat friendly ☐ 3 11
Not friendly at all ☐ 4

5. During your last year at high school, how many times did you use the guidance counseling service?

No service available ☐ 1
1 - 3 times ☐ 2
4 - 6 times ☐ 3 12
7 or more times ☐ 4
Never ☐ 5

6. What program did you take in high school? (If high school was in another country, please select the closest category corresponding to the program you took).

Academic and general patterns

Senior Matriculation (university entrance) ☐ 1
General Matriculation (diploma) ☐ 2

Technical and trades patterns

Technical Matriculation (university entrance) ☐ 3
Technical Certificate (diploma) ☐ 4
Vocational Certificate (diploma) ☐ 5

Business Educational patterns 13

Business Matriculation (university entrance) ☐ 6
Business Certificate (diploma) ☐ 7

Other (please specify--e.g., last grade completed)

____. ☐ 8

7. Which of the following best describes your present high school academic qualifications?

University entrance requirements (a 60% average or better in 5 or more grade twelve departmental subjects including English 30 and Math 30 or 31). ☐ 1

University entrance requirements (a 60% average or better in 5 or more grade twelve departmental subjects including English 30). ☐ 2

Almost matriculation - Credit in 5 or 6 departmental examination subjects but average less than 60%. ☐ 3 14

High school diploma ☐ 4

High school diploma - with one or more grade twelve marks under 50. ☐ 5

Neither high school diploma nor university entrance. ☐ 6

Other (please specify): __________________________.

8. After leaving high school and before enrolling in the Institute how long were you employed?

Did not work ☐ 1
0 - 6 months ☐ 2
7 -12 months ☐ 3
over 1 year but less than 2 years ☐ 4 15
2 years and over ☐ 5

9. When you were considering attending the Institute, how important were the following? Please check one block for each item.

	Very Important	Quite Important	Somewhat Important	Not Important	
Teaching reputation	☐	☐	☐	☐	16
Friendly atmosphere	☐	☐	☐	☐	17
Low cost	☐	☐	☐	☐	18
Athletic program	☐	☐	☐	☐	19
Unemployed	☐	☐	☐	☐	20
Close to home	☐	☐	☐	☐	21
Friend going	☐	☐	☐	☐	22
N.A.I.T. graduates get jobs	☐	☐	☐	☐	23
Advice of parents or spouse	☐	☐	☐	☐	24
Only place program offered	☐	☐	☐	☐	25
Other: (Please specify) ____________	☐	☐	☐	☐	26
	1	2	3	4	

10. When did you decide to go to the Institute? Check one only:

During elementary school ☐ 1
During junior high school ☐ 2
During senior high school ☐ 3
After leaving high school ☐ 4 27
After working six months or more ☐ 5

11. Which of the following statements is most nearly correct in your case? Check one only:

My family is more eager than I am for me to attend the Institute ☐ 1
My family and I are agreed on the importance of the Institute for me ☐ 2 28
I am more eager than my family is for me to attend the Institute ☐ 3
None of the above is appropriate in my case ☐ 4

12. How important is it to you that you receive good Institute grades? Check one only:

Very important ☐ 1
Quite important ☐ 2
Somewhat important ☐ 3 29
Not important ☐ 4

13. How important is it to you that you complete your program? Check one only:

Very important ☐ 1
Quite important ☐ 2
Somewhat important ☐ 3
Not important ☐ 4 30

14. At present, what are your plans after leaving the Institute? Check one only:

Get a full-time job ☐ 1
Get a full-time job and continue my education ☐ 2
Get a full-time job and get married ☐ 3
Continue my education ☐ 4
Continue my education and get married ☐ 5 31
Get married ☐ 6
Undecided ☐ 7
Other (Please specify)
________________________________ ☐ 8

15. What is the highest level of annual income you expect to attain during your lifetime?

$3,000 - $4,999 ☐ 1
$5,000 - $6,999 ☐ 2
$7,000 - $8,999 ☐ 3
$9,000 - $10,999 ☐ 4
$11,000 - $14,999 ☐ 5
$15,000 - $19,999 ☐ 6 32
$20,000 - $24,999 ☐ 7
$25,000 and over ☐ 8

PART B

Directions:

1. Please read each item, beginning each with "I ought to."
2. Then think about how well the statement agrees with your own feelings.
3. Check the box under the word(s) (i.e., I agree very strongly, I agree strongly, I agree moderately, I agree somewhat, I agree not much) that best describes your feelings.

	I AGREE					
I OUGHT TO:	Very Strongly	Strongly	Moderately	Some What	Not Much	
1. plan carefully for future opportunities.	☐	☐	☐	☐	☐	33
2. feel that present happiness is most important.	☐	☐	☐	☐	☐	34
3. be careful not to offend others.	☐	☐	☐	☐	☐	35
	1	2	3	4	5	

		I AGREE					
	I OUGHT TO:	Very Strongly	Quite Strongly	Moder-ately	Some What	Not Much	
4.	put in long hours of work each day.	☐	☐	☐	☐	☐	36
5.	have firm convictions about educational matters.	☐	☐	☐	☐	☐	37
6.	attain a higher position than my father attained.	☐	☐	☐	☐	☐	38
7.	consider carefully the feelings of others.	☐	☐	☐	☐	☐	39
8.	save money carefully.	☐	☐	☐	☐	☐	40
9.	make my own decisions in most matters.	☐	☐	☐	☐	☐	41
10.	choose a job where I can work with many interesting people.	☐	☐	☐	☐	☐	42
11.	strive for peace with everyone.	☐	☐	☐	☐	☐	43
12.	have firm ideas about politics.	☐	☐	☐	☐	☐	44
13.	try to do things better than others.	☐	☐	☐	☐	☐	45
14.	make as many friends as possible.	☐	☐	☐	☐	☐	46
15.	spend less and save more.	☐	☐	☐	☐	☐	47
16.	resist strict discipline in school.	☐	☐	☐	☐	☐	48
17.	be very ambitious.	☐	☐	☐	☐	☐	49
18.	feel that the group should decide what kind of behavior it will approve.	☐	☐	☐	☐	☐	50
		1	2	3	4	5	

		I AGREE					
	I OUGHT TO:	Very Strongly	Quite Strongly	Moder-ately	Some What	Not Much	
19.	feel that present sacrifice may be important for future gains.	☐	☐	☐	☐	☐	51
20.	get a well paying job.	☐	☐	☐	☐	☐	52
21.	wear clothes similar to those of my friends.	☐	☐	☐	☐	☐	53
22.	feel children should obey their parents.	☐	☐	☐	☐	☐	54
23.	do things which permit me to have fun and be happy.	☐	☐	☐	☐	☐	55
24.	be very sociable.	☐	☐	☐	☐	☐	56
25.	accept strict discipline in the home.	☐	☐	☐	☐	☐	57
26.	try to avoid making same mistake twice.	☐	☐	☐	☐	☐	58
27.	get a job which has status.	☐	☐	☐	☐	☐	59
28.	feel that work comes before pleasure.	☐	☐	☐	☐	☐	60
29.	plan and save for the future.	☐	☐	☐	☐	☐	61
30.	feel present happiness is most important thing in life.	☐	☐	☐	☐	☐	62
31.	spend as much time as I can working independently.	☐	☐	☐	☐	☐	63
32.	feel that old-fashioned discipline is needed today.	☐	☐	☐	☐	☐	64
33.	stand by my convictions.	☐	☐	☐	☐	☐	65
34.	strive to be an expert at something.	☐	☐	☐	☐	☐	66
		1	2	3	4	5	

	I AGREE					
I OUGHT TO:	Very Strongly	Quite Strongly	Moderately	Some What	Not Much	
35. have fun attending parties and being with people.	☐	☐	☐	☐	☐	67
36. get as much pleasure out of life now as possible.	☐	☐	☐	☐	☐	68
37. feel that it is right to be very ambitious.	☐	☐	☐	☐	☐	69
	1	2	3	4	5	

PART C

1. Which of the following describes the community in which you lived for the majority of the three years before coming to N.A.I.T.?

Rural farm ☐ 1
Rural non-farm--population under 1,000 ☐ 2
Urban--population 1,001 - 10,000 ☐ 3
Urban--population 10,001 - 25,000 ☐ 4
Urban--population 25,001 - 50,000 ☐ 5 70
Urban--population over 50,001 ☐ 6

2. Father's (or legal guardian's) occupation (Give major lifetime occupation if deceased or retired).

____. 71-72

3. Mother's occupation (Give major lifetime occupation if deceased or retired).

____. 73-74

4. Father's education. Check highest level reached.

No high school ☐ 1
Some high school ☐ 2
High school completed ☐ 3
Some technical or vocational training ☐ 4
Technical or vocational training completed ☐ 5 75
Some university ☐ 6
University Bachelors degree completed ☐ 7
University graduate degree (Masters or Ph.D.) ☐ 8
Do not know ☐ 9

5. Mother's education. Check highest level reached.

No high school ☐ 1
Some high school ☐ 2
High school completed ☐ 3
Some technical or vocational training ☐ 4
Technical or vocational training completed (secretarial, nursing, etc.) ☐ 5 76
Some university ☐ 6
University Bachelors degree ☐ 7
University graduate degree (Masters or Ph.D.) ☐ 8
Do not know ☐ 9

6. How many brothers and/or sisters do you have?

None ☐ 1
One ☐ 2
Two ☐ 3
Three ☐ 4
Four ☐ 5
Five ☐ 6
Six ☐ 7
Seven or more ☐ 8 77

7. Approximately how much do you expect to spend during your year at N.A.I.T.? Please check one box for each of the categories shown on the left.

	None	less than $100	$101 to $200	$201 to $300	$301 to $400	$401 to $500	$501 to $600	$601 to $700	$701 or more	
Tuition, fees, supplies.	☐	☐	☐	☐	☐	☐	☐	☐	☐	78
Room and board.	☐	☐	☐	☐	☐	☐	☐	☐	☐	79
Clothing and incidentals.	☐	☐	☐	☐	☐	☐	☐	☐	☐	80
Travel and car.	☐	☐	☐	☐	☐	☐	☐	☐	☐	81
Other: (Please Specify).										82
________________.	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	1	2	3	4	5	6	7	8	9	

8. How are you covering your expenses (fees, books, room and board, etc.) this year at N.A.I.T.? Please indicate approximate amount expected from each source of income on the left by checking one appropriate box for each source.

	less than $100	$101 to $300	$301 to $500	$501 to $700	$701 to $900	$901 to $1,100	$1,101 or more	
Job last summer	☐	☐	☐	☐	☐	☐	☐	83
Part-time job while at N.A.I.T.	☐	☐	☐	☐	☐	☐	☐	84
Full-time job while at N.A.I.T.	☐	☐	☐	☐	☐	☐	☐	85
Personal savings	☐	☐	☐	☐	☐	☐	☐	86
Government loans or grants	☐	☐	☐	☐	☐	☐	☐	87
Scholarships or bursaries	☐	☐	☐	☐	☐	☐	☐	88
Parents	☐	☐	☐	☐	☐	☐	☐	89
Wife or husband	☐	☐	☐	☐	☐	☐	☐	90
Other: (Please Specify):								91
____________________.	☐	☐	☐	☐	☐	☐	☐	
	1	2	3	4	5	6	7	

9. If you received financial help to attend N.A.I.T. this year, how much must be repaid?

I did not receive financial help ☐ 1
I do not have to repay ☐ 2
less than $100 ☐ 3
$101 -- $400 ☐ 4
$401 -- $700 ☐ 5 92
$701 -- $1,000 ☐ 6
$1,001 -- $1,500 ☐ 7
$1,501 -- $2,000 ☐ 8
over $2,000 ☐ 9

10. Age (nearest birthday):

17 or under ☐ 1
18 ☐ 2
19 ☐ 3
20 ☐ 4
21 ☐ 5
22 ☐ 6
23 ☐ 7
24 ☐ 8

25 ☐ 9
26 ☐ 01
27 ☐ 02
28 ☐ 03
29 ☐ 04 93-94
30 - 35 ☐ 05
36 - 40 ☐ 06
over 40 ☐ 07

11. Make an estimate of your parents' combined income last year (i.e. total family income):

Deceased ☐ 1
Retired ☐ 2
Less than $4,000 ☐ 3
$4,000 -- $6,000 ☐ 4
$6,001 -- $8,000 ☐ 5 95
$8,001 -- $10,000 ☐ 6
$10,001 - $15,000 ☐ 7
$15,001 - $20,000 ☐ 8
$20,001 or more ☐ 9

If you have experienced any difficulty in answering any of the foregoing questions and/or wish to comment on them please use the space below.

THANK YOU FOR YOUR PARTICIPATION

APPENDIX C

Varimax Rotated Factors

Varimax Rotated Factors

Communalities		1	2	3	4	5	6	7	8
1	0.568	0.422	0.513	0.271	-0.100	0.145	0.035	0.022	-0.144
2	0.653	0.024	-0.024	0.107	0.799	-0.042	0.015	0.006	0.002
3	0.658	-0.043	0.129	0.771	0.038	0.123	0.061	0.052	-0.148
4	0.565	0.404	0.273	0.439	0.036	0.176	-0.245	-0.112	0.173
5	0.501	0.480	0.168	0.361	-0.015	0.193	-0.155	0.183	-0.129
6	0.407	0.535	0.169	0.036	0.022	-0.033	0.083	-0.157	0.240
7	0.683	-0.063	0.162	0.761	0.043	0.104	0.128	0.099	-0.184
8	0.741	0.061	0.811	0.185	-0.007	0.108	-0.048	0.109	0.141
9	0.578	-0.046	0.159	0.164	0.124	-0.165	0.033	0.692	0.030
10	0.410	0.145	0.116	0.396	-0.096	-0.108	0.127	0.375	0.099
11	0.514	0.093	0.070	0.619	0.155	-0.006	0.101	0.265	0.111
12	0.479	0.427	-0.160	0.356	0.051	0.116	-0.118	0.263	0.211
13	0.534	0.673	0.084	-0.034	0.109	0.019	0.072	0.127	0.199
14	0.540	0.173	0.216	0.459	0.025	0.109	0.419	0.051	0.248
15	0.692	0.129	0.756	0.165	-0.040	0.116	0.130	0.141	0.161
16	0.502	0.139	0.001	-0.038	0.377	-0.514	-0.077	0.093	0.245
17	0.554	0.512	0.430	0.099	0.053	0.130	0.207	0.159	-0.100
18	0.528	0.154	0.124	0.001	0.096	0.063	0.045	-0.047	0.687
19	0.502	0.398	0.437	0.063	-0.149	0.274	0.103	0.200	-0.030
20	0.581	0.334	0.431	-0.183	0.122	-0.078	0.406	0.058	0.247

Varimax Rotated Factors (continued)

	Communalities	1	2	3	4	5	6	7	8
21	0.602	0.100	0.043	-0.065	0.084	0.228	0.187	-0.020	0.701
22	0.559	0.040	0.307	0.096	-0.042	0.643	0.133	0.136	0.040
23	0.537	0.082	0.073	-0.030	0.531	-0.057	0.463	0.138	0.076
24	0.599	0.145	0.078	0.350	0.245	0.090	0.607	0.005	0.109
25	0.603	0.152	0.152	0.173	-0.021	0.690	-0.042	0.029	0.217
26	0.532	0.181	0.149	0.109	-0.212	0.214	0.382	0.464	-0.112
27	0.555	0.446	0.193	-0.038	-0.049	0.173	0.383	-0.111	0.355
28	0.561	0.361	0.302	0.200	-0.161	0.470	0.160	-0.108	0.128
29	0.640	0.230	0.690	0.094	-0.032	0.305	0.067	0.043	0.041
30	0.665	-0.033	-0.075	0.049	0.792	0.012	0.047	0.120	0.109
31	0.408	0.160	0.132	0.077	0.211	0.198	-0.089	0.515	0.048
32	0.564	0.165	0.096	-0.025	0.061	0.682	-0.145	0.105	0.162
33	0.575	0.109	-0.025	0.143	0.103	0.201	0.121	0.611	-0.322
34	0.531	0.616	0.097	-0.095	-0.003	0.082	0.221	0.275	0.038
35	0.573	0.101	0.023	0.131	0.328	-0.093	0.639	0.109	0.099
36	0.648	0.047	-0.054	0.037	0.697	-0.076	0.386	0.034	-0.010
37	0.568	0.501	0.308	0.154	0.121	0.273	0.328	-0.011	-0.041
	20.910	3.342	3.265	2.909	2.630	2.559	2.331	2.005	1.871
Percent of Common Variance	100.000	15.982	15.613	13.910	12.576	12.237	11.147	9.589	8.947
Percent of Total Variance	56.513	9.032	8.823	7.861	7.107	6.915	6.299	5.419	5.056